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GROUND-WATER MONITORING AT REGULATED UNITS

**ROCKY FLATS PLANT
Golden, Colorado**

31 March 1988

ADMIN RECORD

SW-A -002892

GROUND-WATER MONITORING AT REGULATED UNITS

ROCKY FLATS PLANT

1.0 INTRODUCTION

This report presents ground-water monitoring data as required under the Colorado Hazardous Waste Act regulations, 6 CCR 1007-3, 265.94 Subpart F for RCRA interim status facilities at Rocky Flats Plant. This submittal is also in response to the December 14, 1987 letter from the Colorado Department of Health (CDH). The referenced regulations apply to the interim status regulated units undergoing closure at the Plant. An alternate monitoring program is being conducted at the West Spray Field and Present Landfill pursuant to 6 CCR 1007-3, 265.90(d), and assessment monitoring is ongoing at the Solar Evaporation Ponds under 6 CCR 1007-3, 265.93(d)(4). This report presents ground-water quality and ground-water elevation data from these monitoring programs in accordance with 265.94(b)(2).

2.0 GROUND-WATER MONITORING AT ROCKY FLATS PLANT

Ground-water monitoring for radionuclides and other parameters has been conducted at the Rocky Flats Plant since the first monitor wells were installed in 1960. A total of 56 monitor wells were installed at the Plant between 1960 and 1985. These wells were routinely sampled for radionuclides, and beginning in 1985 they were sampled for other chemical paramaters (volatile organics, metals, and inorganics).

In late 1986, Phase I of a comprehensive program of site characterizations, remedial investigations, feasibility studies, and remedial/corrective actions began at the Rocky Flats Plant. These investigations are pursuant to the U.S. Department of Energy (DOE) Comprehensive Environmental Assessment and Response Program (CEARP) and a Compliance Agreement finalized by representatives of DOE, the U.S. Environmental Protection Agency (EPA) and CDH on July 31, 1986.

Phase I included a detailed characterization of ground-water flow and quality in the vicinity of the solar evaporation pond, preparation of the ground-water monitoring and protection section of the Rocky Flats Plant RCRA Part B permit application (Rockwell International, 1986a), and preparation of closure plans and a RCRA post-closure care permit application. During 1986, 69 ground-water monitoring wells meeting the specifications of EPA (1985) were installed to characterize the hydrogeology and ground-water quality of the Plant site and to satisfy RCRA Subpart F requirements. The work plan for well installation, sampling, and analysis of these wells is presented in the Geological and Hydrological Site Characterization Draft Work Plan for Rocky Flats Plant (Rockwell International, 1986b). Site characterization and plume delineation wells were installed at the solar evaporation ponds (assessment monitoring program), and site characterization wells were constructed at the Present Landfill and West Spray Field (alternate monitoring programs).

An additional 67 wells were installed at Rocky Flats Plant in 1987 to characterize ground-water quality and flow at various Solid Waste Management Units and at the regulated units. The work plans for installation, sampling, and analysis of these wells are presented in the CEARP Installation Generic and Site Specific (Remedial Investigation) Work Plans (DOE, 1987a and DOE, 1987b).

3.0 WEST SPRAY FIELD

The West Spray Field is located in the west buffer zone of Rocky Flats Plant. Approximately 67,000,000 gallons of waste water were applied to this area between 1982 and 1985. Approximately 10,000,000 gallons of the waste water were RCRA regulated wastes due to the presence of volatile organic compounds, and approximately 57,000,000 gallons were tertiary treated sanitary waste water (not RCRA regulated). The 10,000,000 gallons of RCRA regulated waste water were also high in nitrates.

The uppermost aquifer at the West Spray Field is the Quaternary Rocky Flats Alluvium. Several shallow PVC wells were installed in the alluvium in the vicinity of the West Spray Field in 1981 and 1982; however the well completion details of these wells are unknown. Therefore, new stainless steel wells were installed in the uppermost aquifer around the West Spray Field in 1986. These wells serve as an

alternate ground-water monitoring system (6 CCR 1007-3, 265.90(d)) at the facility. The work plan for well installation, sampling, and analysis of these wells is presented in the Geological and Hydrological Site Characterization Draft Work Plan for Rocky Flats Plant (Rockwell International, 1986a).

Presented below are evaluations of ground-water elevations and rates of migration at the West Spray Field pursuant to 6CCR 1007-3, 265.93(f) and 265.94(d)(2), respectively. A more detailed and in-depth discussion of these data will be presented in the Revised West Spray Field Closure Plan scheduled for submission in October, 1988.

3.1 Evaluation of Ground-water Elevations

Five wells (45-86, 47-86, 49-86, 50-86, and 51-86) are completed in the uppermost aquifer in the vicinity of the West Spray Field. Water table elevations for these wells are shown on Figures 1 through 4 for March, June, August, and November 1987, respectively. Based on these maps, ground-water flow in the vicinity is generally from west to east with some portion of the flow toward the north (well 47-86). Well 51-86 was upgradient of the spray field at the time of these water level measurements; however, spray irrigation in the area may have reversed ground-water flow directions in the past. Nitrate has historically been detected in well 51-86 indicating this well has been impacted by the West Spray Field. One alluvial monitor well is located within the West Spray Field (49-86) and three wells are located downgradient of the unit (45-86, 47-86, and 50-86).

One additional monitor well is necessary at the West Spray Field for the alternate monitoring system to comply with 6 CCR 1007-3, 265.91(a). An additional upgradient well will be installed further west of the West Spray Field where it will not be impacted by the facility (6 CCR 1007-3, 265.91(a)(1)(ii)). Gravel mining operations west of well 51-86 restricted the location of an upgradient well during 1986; however, another well will be installed west of these operations.

EXPLANATION

**5186 Monitor Well Location, Well Identification,
O 0009.86-- and Elevation of Water Table
(feet above sea)**

**Lines of Equal Water Table Elevation
(feet above sea level).**

Contour Interval = 5 feet
Scale: 1"=500'

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(303) 940-6800

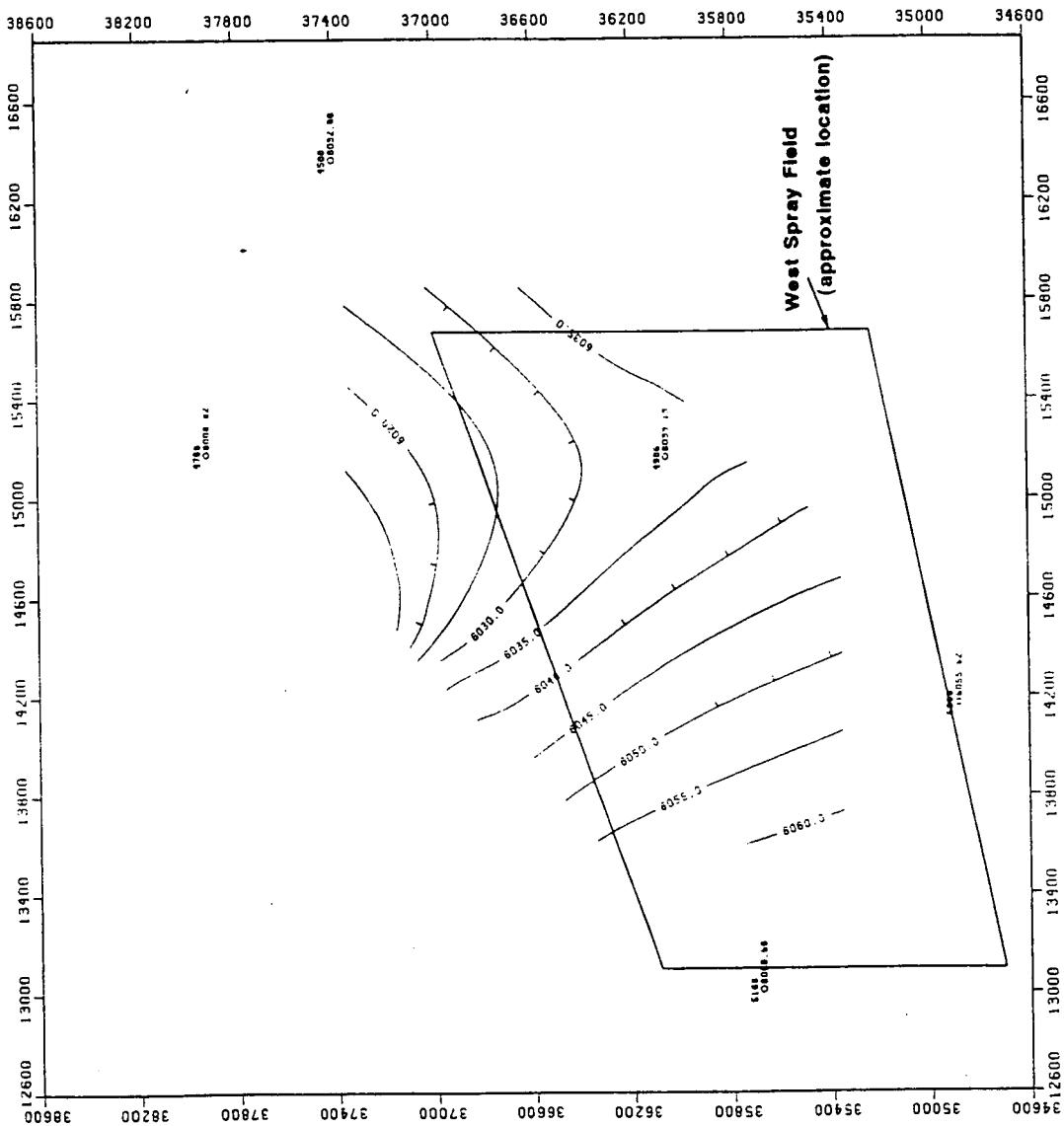


Figure 1
Water Table Elevations at the
West Spray Field for March, 1967

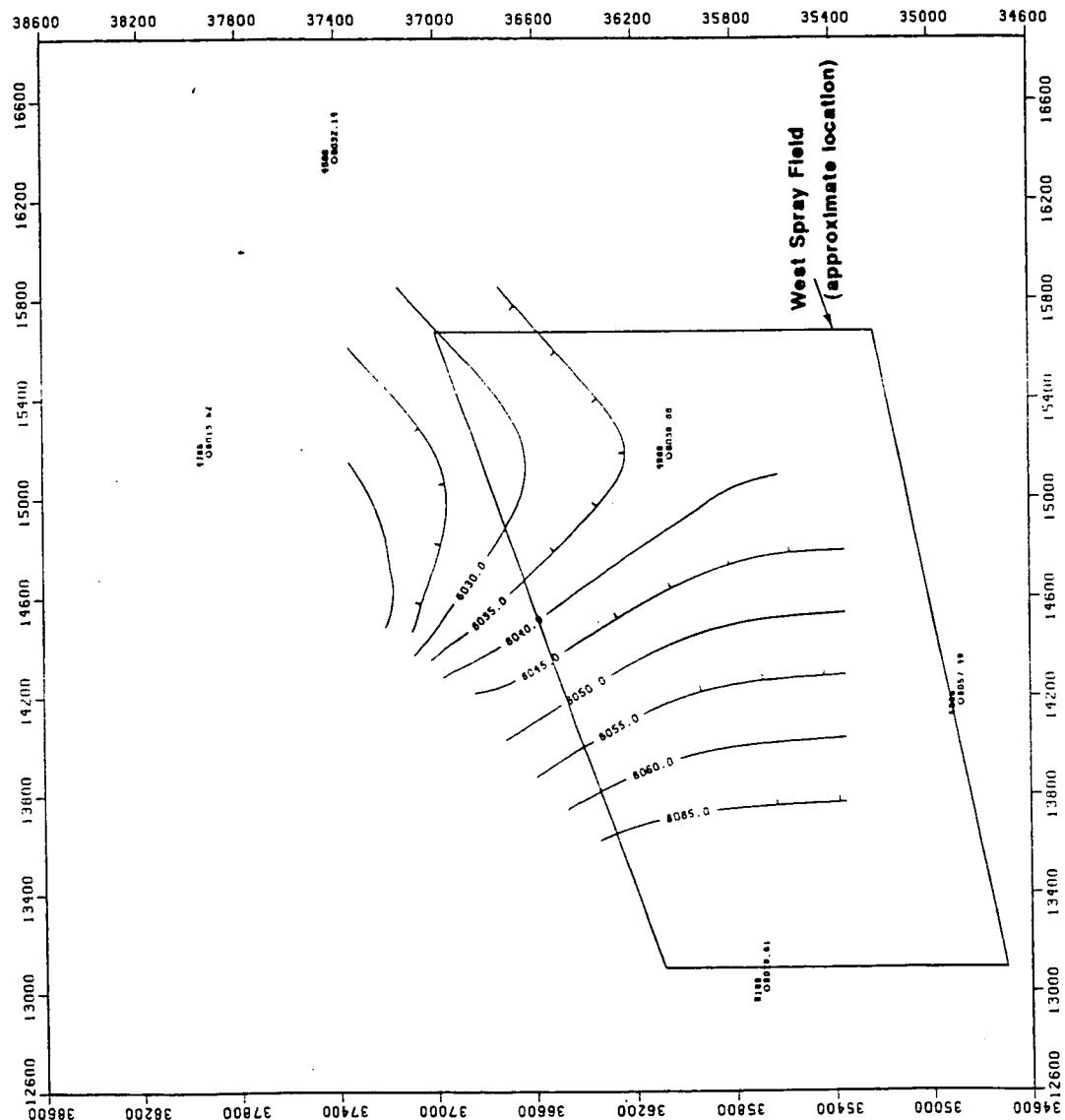
31 March 1991

EXPLANATION

**5186 Monitor Well Location, Well Identification,
O 6069.64 — and Elevation of Water Table
(feet above sea level)**

60-50 ↗ Lines of Equal Water Table Elevation
(feet above sea).
Hatching Lines Indicate flow direction.

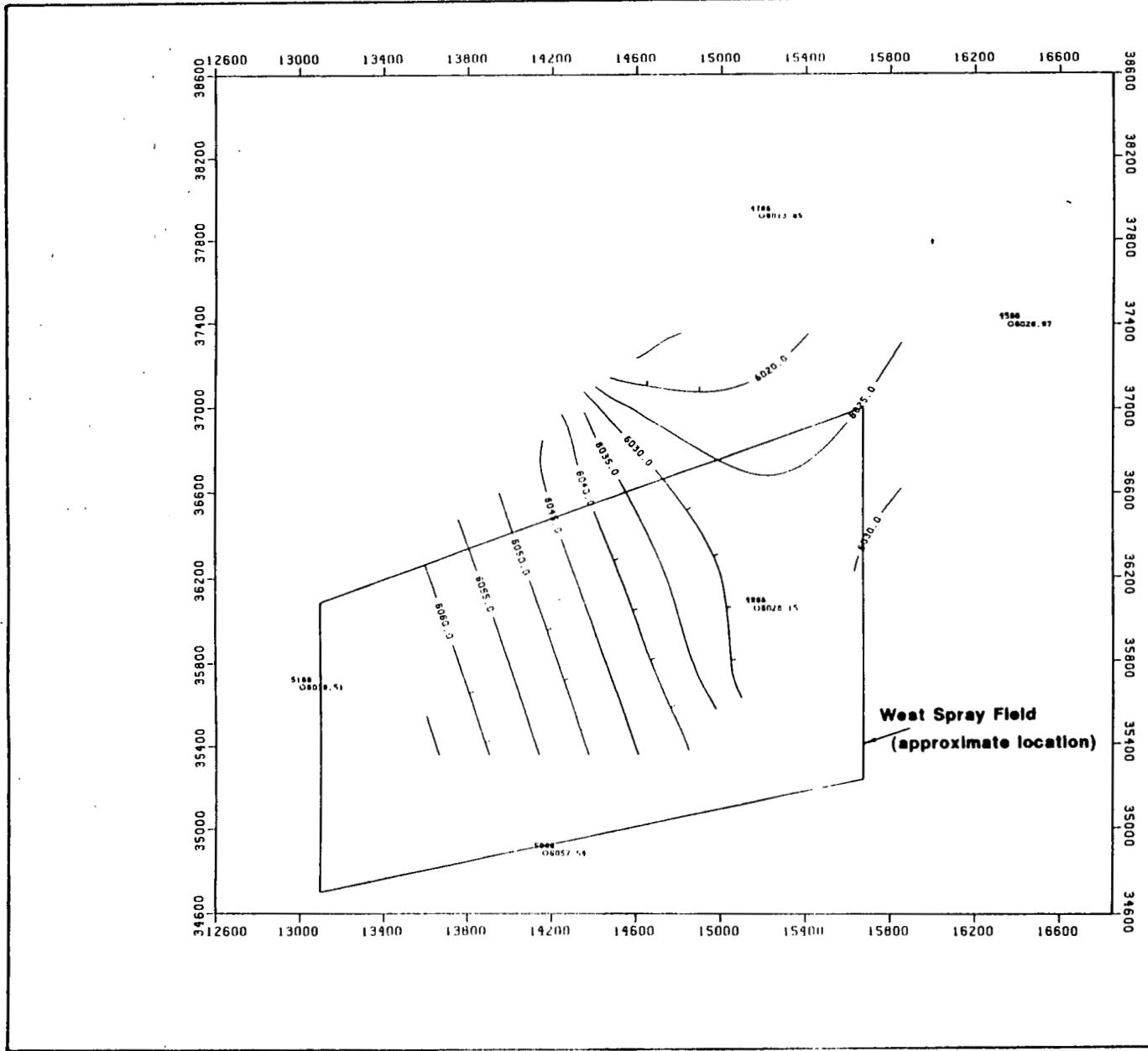
Scale: $1'' = 500'$



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215 Union Street
Suite 600
Lakewood, CO 80401
(303) 980-6444

Figure 2
Water Table Elevations at the
West Spray Field for June, 1987

31 MARCH 1980



EXPLANATION

5186
o Monitor Well Location, Well Identification,
6069.65 and Elevation of Water Table
(feet above msl)

8050 Lines of Equal Water Table Elevation
(feet above sea level).
Hatching Lines Indicate flow direction.

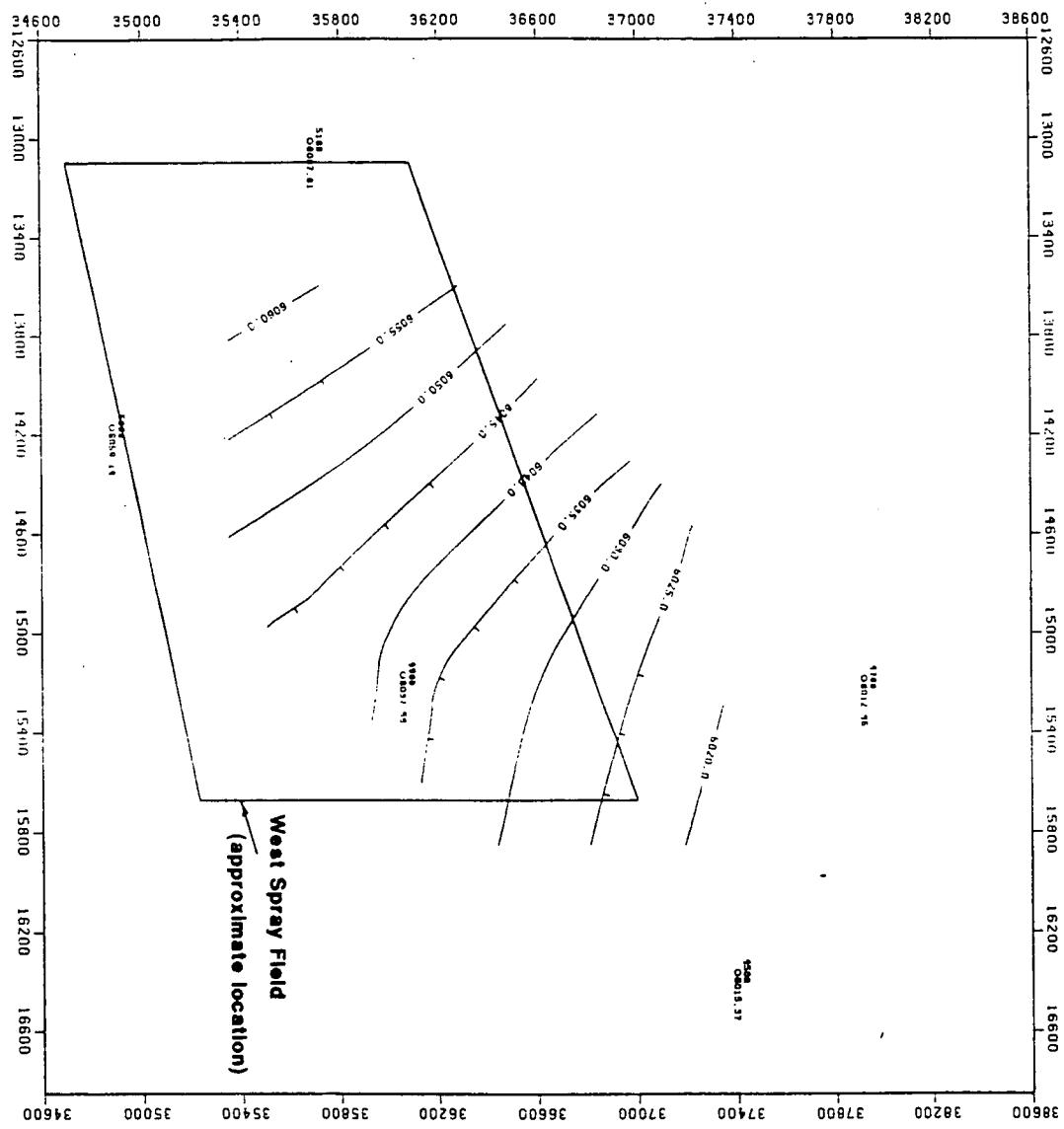
Contour Interval = 5 feet



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Suite 600
Broomfield, CO 80020
(303) 900-0000

Figure 3
Water Table Elevations at the
West Spray Field for August, 1987



EXPLANATION

5166 Monitor Well Location, Well Identification,
o
6069.66— and Elevation of Water Table

(feet above mean)

foot above me

Lines of Equal Water Table Elevation
(feet above sea level).

Hachure Lines indicate flow direction.

Contour Interval = 5 feet

Scale: 1" = 300'

215 Under Baudrillard
see also Deleuze

Water Table Fluctuation 1

West Spray Field for November, 1967

3.2 Migration Rates

Site-specific ground-water velocity values for the Rocky Flats Alluvium are presented in Section E of the Post-Closure Care Permit Application for Rocky Flats Plant (Rockwell International, 1986c) and in the 903 Pad, Mound, and East Trenches Remedial Investigation Report (Rockwell International, 1987). These references report a maximum ground-water velocity of 84 feet per year (ft/year) for the Rocky Flats Alluvium which is the uppermost aquifer at the West Spray Field.

Ground-water quality data for the West Spray Field alluvial wells are presented in Attachment A. These data include volatile organic, metal, radionuclide, and inorganic results for the initial 1986 sampling and the four quarters of 1987.

4.0 PRESENT LANDFILL

The Present Landfill, located in the northern Rocky Flats Plant buffer zone, has been in operation since 1968. The landfill was first identified as a RCRA regulated unit in the fall of 1986 due to the presence of materials contaminated with listed hazardous wastes entering the landfill.

A ground-water intercept system was built around the landfill in 1974 to minimize the quantity of ground water entering the landfill, and to manage any leachate potentially generated in the landfill. The ground-water intercept system should effectively separate the ground-water flow outside the landfill from any ground-water contained in the fill. The actual effectiveness of this system is under evaluation, and results of this investigation will be presented in the Revised Present Landfill Closure Plan scheduled for submission in July, 1988.

Also in 1974, the drainage downstream of the landfill was dammed and a pond formed at the toe of the fill. This pond was designed to collect intercepted ground water and surface runoff for monitoring. Samples are still routinely collected from this pond. This pond is not shown on the enclosed water table maps; however, it is being characterized and will also be discussed in the Revised Present Landfill Closure Plan being submitted in July, 1988.

The uppermost aquifer at the Present Landfill is composed of the Quaternary Rocky Flats Alluvium, colluvium, and valley fill alluvium. Two alluvial wells were

installed in the uppermost aquifer at the Present Landfill in 1986. 10-86 completed in Rocky Flats Alluvium is upgradient of the unit, and 7-86 completed in valley fill alluvium is downgradient of the landfill. Two additional wells (71-87 and 72-87) were installed downgradient of the Present Landfill in 1987 to characterize downgradient ground-water quality in accordance with 6 CCR 1007-3, 265.91(a)(2), and 11 new wells were installed within the landfill to evaluate the ground-water intercept system. Wells surrounding the ground-water intercept system are not intended for long-term ground-water monitoring unless 1988 sampling results indicate the need for continued monitoring at these locations.

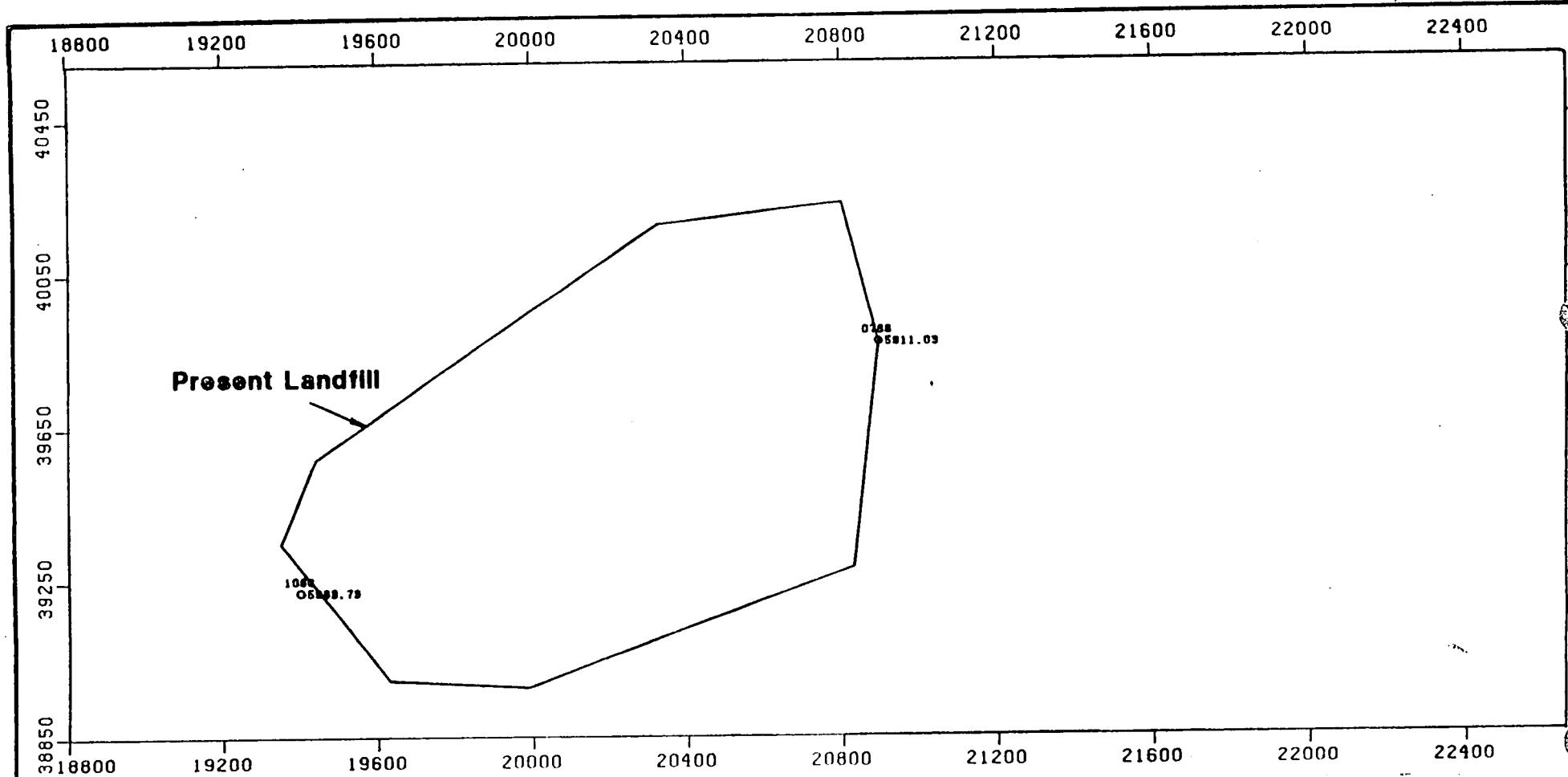
Presented below are evaluations of ground-water elevations and rates of migration at the Present Landfill pursuant to 6CCR 1007-3, 265.93(f) and 265.94(d)(2), respectively. A more detailed and in-depth discussion of these data will be presented in the Revised Present Landfill Closure Plan scheduled for submission in July, 1988.

4.1 Evaluation of Ground-Water Elevations

Four wells (7-86, 10-86, 71-87, and 72-87) are completed in the uppermost aquifer in the vicinity of the Present Landfill. Water table elevations for wells 7-86 and 10-86 are shown on Figures 5, 6, and 7 for March, June, and August, respectively. Based on these maps, ground-water flow in the vicinity is from west to east. Since there were only two wells completed in the uppermost aquifer for the first three quarters of 1987, these data are not contoured. Figure 8 shows the water table configuration at the Present Landfill for January 1988 after completion of the 1987 alluvial monitor wells. This map also shows alluvial ground-water flow from west to east at the landfill.

4.2 Migration Rates

Site-specific ground-water velocity values for the Rocky Flats Alluvium and North Walnut Creek valley fill alluvium are presented in the 903 Pad, Mound, and East Trenches Remedial Investigation Report (Rockwell International, 1987) and in Section E of the Post-Closure Care Permit Application for Rocky Flats Plant (Rockwell International, 1986c), respectively. These references report a maximum ground-water velocity of 84 ft/year for the Rocky Flats Alluvium and a maximum ground-water velocity of 9 ft/year for the Walnut Creek valley fill alluvium.

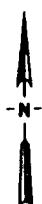


EXPLANATION

Monitor Well Location, Well Identification,
and Elevation of Water Table (feet above msl)

Lines of Equal Water Table Elevation
(feet above msl).

Hatchure Lines Indicate flow direction.



Scale: 1"=400'

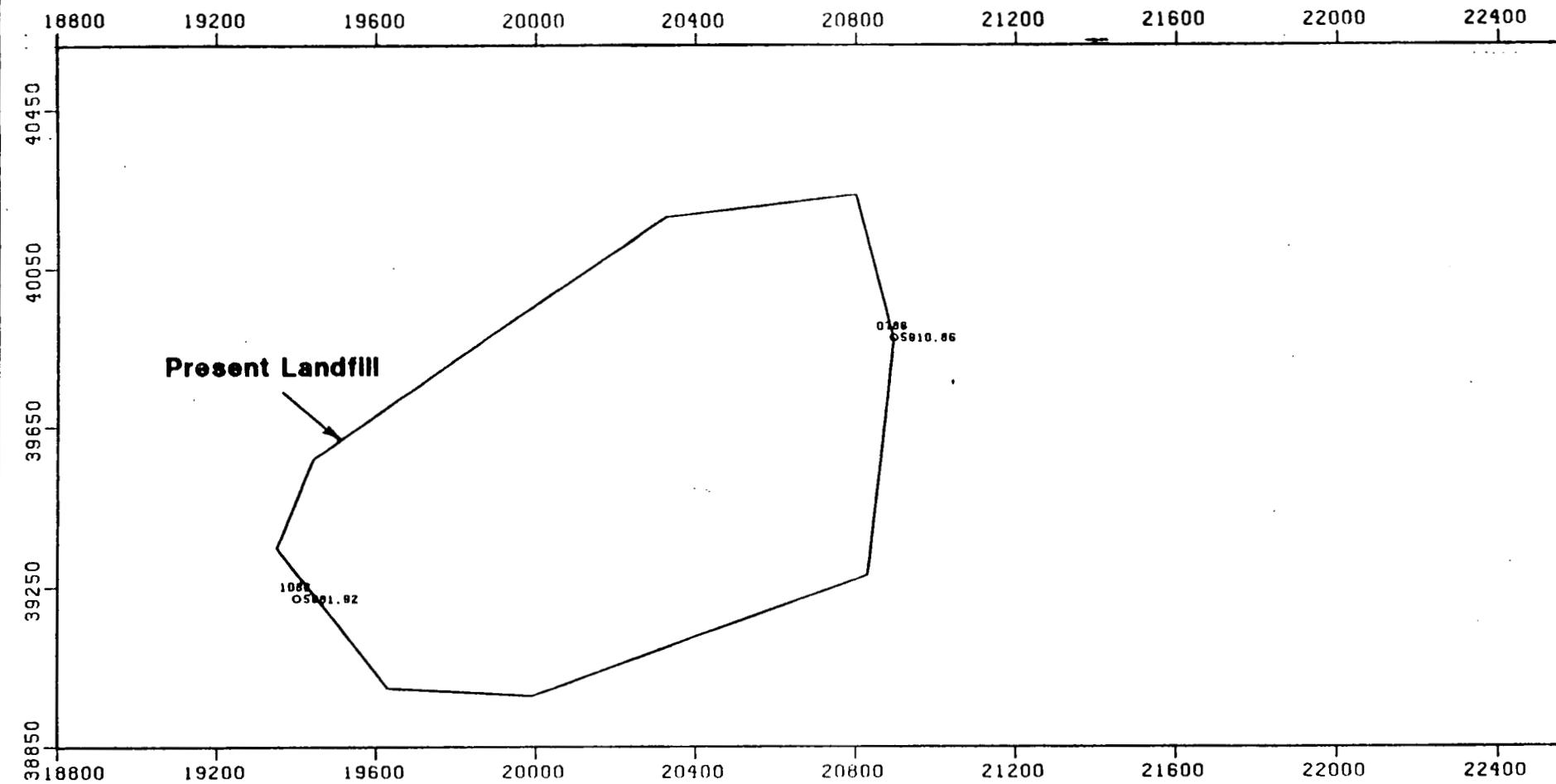
Contour Interval = 10 feet

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(303) 980-6800

Figure 5

Water Table Elevations at the
Present Landfill for April, 1988



EXPLANATION

5186
o
6069.86

6050

Monitor Well Location, Well Identification,
and Elevation of Water Table (feet above msl)

Lines of Equal Water Table Elevation
(feet above msl).

Hatchure Lines Indicate flow direction.

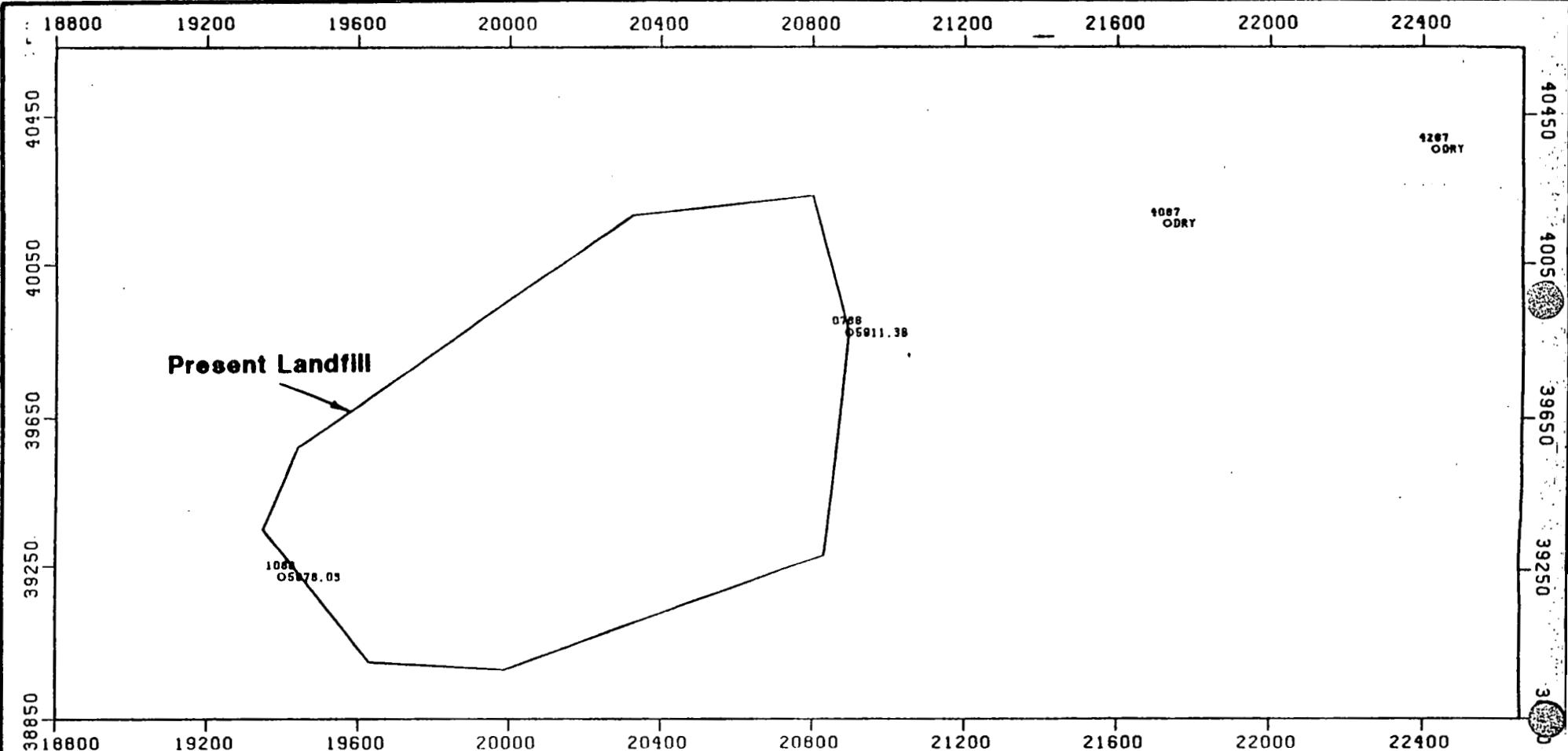
Scale: 1"=400'

Contour Interval = 10 feet

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Figure 6

Water Table Elevations at the
Present Landfill for June, 1987



EXPLANATION

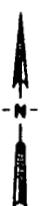
5186
0
6069.66

Monitor Well Location, Well Identification,
and Elevation of Water Table (feet above msl)

6050

Lines of Equal Water Table Elevation
(feet above msl).

Hatchure Lines indicate flow direction.



Scale: 1"=400'

Contour Interval = 10 feet

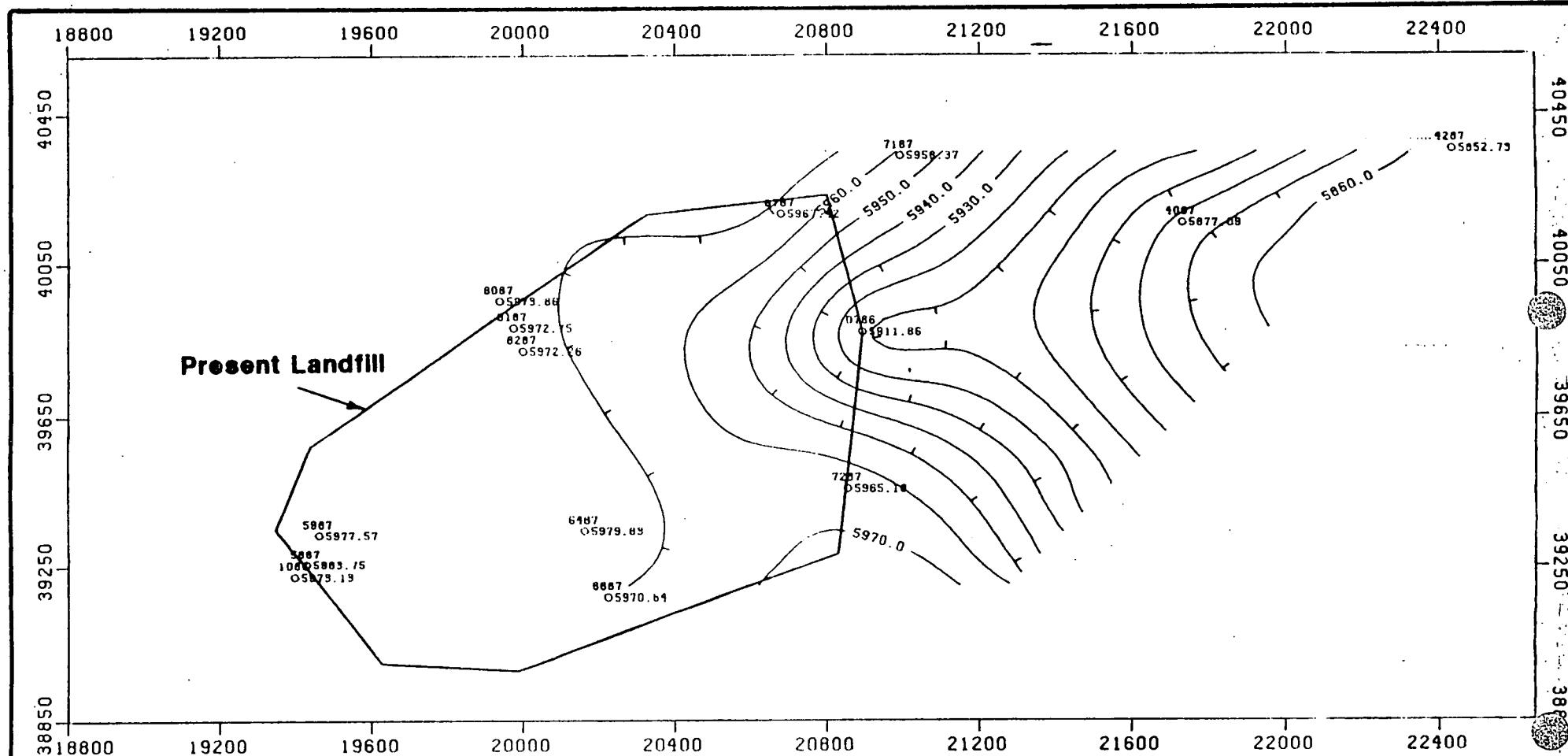
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Figure 7

Water Table Elevations at the
Present Landfill for August, 1987

31 MARCH 1988



EXPLANATION

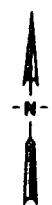
5186
o
6069.66

**Monitor Well Location, Well Identification,
and Elevation of Water Table (feet above msl)**

6050

Lines of Equal Water Table Elevation (feet above msl).

Hatchure Lines indicate flow direction.



Scale: 1"=400'

Contour Interval =10 feet

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Figure 8

Water Table Elevations at the Present Landfill for January, 1968

Ground-water quality data for the Present Landfill alluvial wells are presented in Attachment B. These data include volatile organic, metal, radionuclide, and inorganic results for the initial 1986 sampling and the four quarters of 1987 where available.

5.0 SOLAR EVAPORATION PONDS

The Solar Evaporation Ponds at the Rocky Flats Plant have been utilized for waste management since 1953. The ponds were first identified as possibly being RCRA regulated in 1985. Ground-water monitor wells were first installed in the area in 1960 and at various times thereafter. The existing wells at the Solar Evaporation Ponds did not meet the design criteria specified by EPA (1985). Therefore, 22 new stainless steel wells were installed in the vicinity of the ponds in 1986, and four additional wells were installed in 1987.

The presence of nitrate in ground water downgradient of the solar ponds prompted ground-water remedial action in the area in 1971. Six interceptor trenches were excavated northeast of the ponds to intercept ground water and pump it back to the ponds. In 1980 an extensive french drain system was installed on the hillside northeast of the ponds, and the interceptor trenches were abandoned. Ground water collected in the french drain system is collected at the Interceptor Pump House and pumped back to the Solar Evaporation Ponds.

The Quaternary Rocky Flats Alluvium and underlying Cretaceous Arapahoe Sandstones comprise the uppermost aquifer at the Solar Evaporation Ponds. Alluvial wells 24-86 and 56-87 are located upgradient of the facility, and alluvial wells 15-86, 17-86, 20-86, 22-86, 26-86, 28-86, 29-86, 37-87, and 38-87 are located downgradient of the facility. Bedrock well 23-86 is upgradient of the ponds, and downgradient bedrock wells include 14-86, 16-86, 25-86, 27-86, 30-86, 31-86, 32-86, and 39-87.

Presented below are evaluations of ground-water elevations and rates of migration at the Solar Evaporation Ponds pursuant to 6 CCR 1007-3, 265.93(f) and 265.94(d)(2), respectively. More detailed and in-depth discussions of these data will be presented in the Revised Solar Evaporation Ponds Closure Plan scheduled for completion in July, 1988.

5.1 Evaluation of Ground-Water Elevations

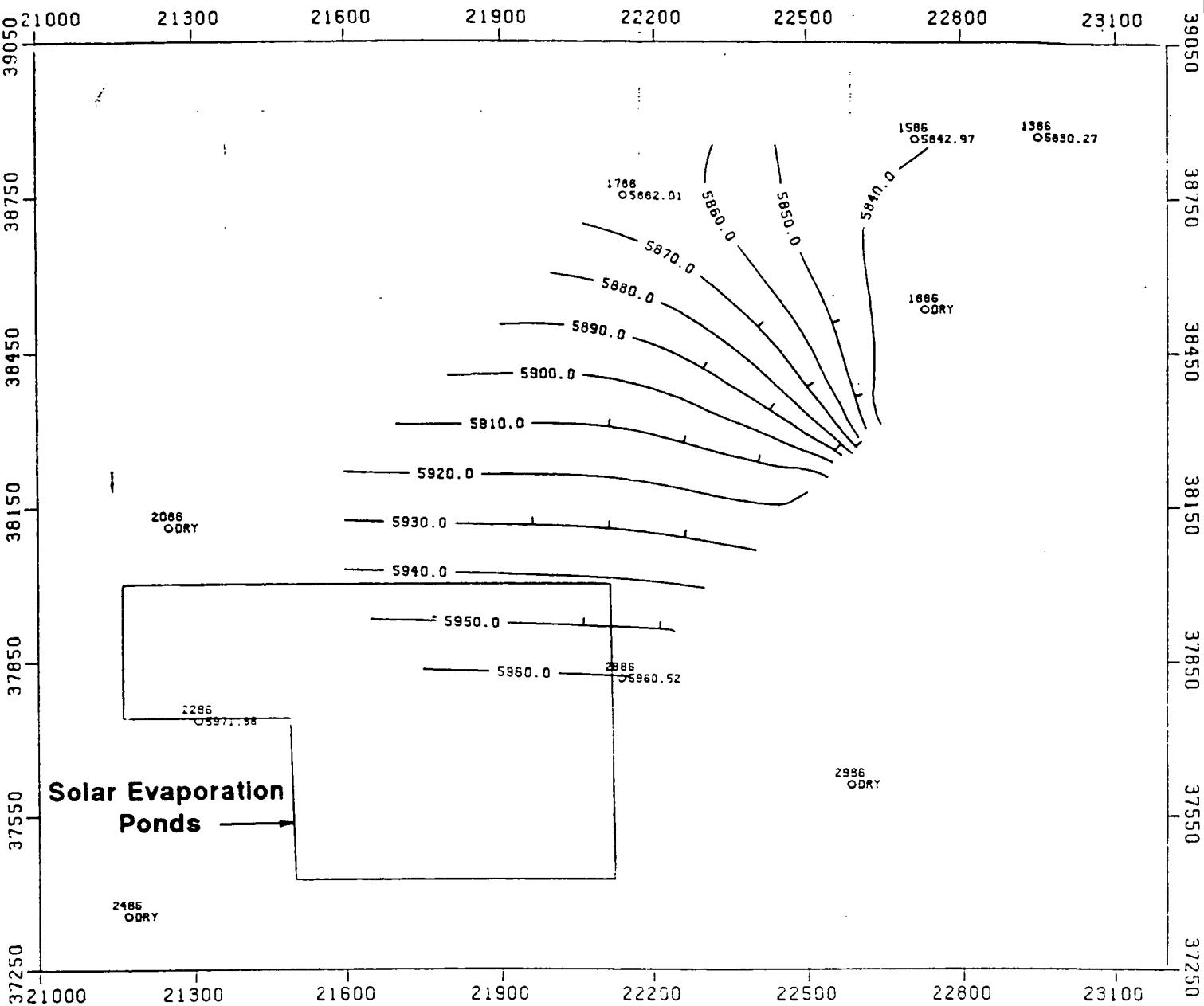
Eleven wells are completed in surficial materials at the Solar Evaporation Ponds, and 9 wells are completed in sandstones of the Arapahoe Formation. Figures 9, 10, 11, and 12 show the water table elevation in surficial materials at the Solar Evaporation Ponds for March, June, August, and November 1987, respectively. Based on these maps, alluvial ground water flows generally from the west to the east and northeast downgradient of the ponds. Previous potentiometric surface maps have shown some component of flow to the south (Rockwell International, 1986a); however, the area south of the ponds was unsaturated during the time frame of these maps.

Bedrock wells in the vicinity of the solar evaporation ponds are completed in different stratigraphic units, and thus, a potentiometric surface map of a given sandstone unit cannot be constructed. Ground-water flow in individual sandstones is believed to be from west to east based on regional data (Robson and others, 1981) and site specific data at the 903-Pad Area (Rockwell International, 1987).

5.2 Migration Rates

Site-specific ground-water velocity values for the Rocky Flats Alluvium and North Walnut Creek valley fill alluvium are presented in the 903 Pad, Mound, and East Trenches Remedial Investigation Report (Rockwell International, 1987) and in Section E of the Post-Closure Care Permit Application for Rocky Flats Plant (Rockwell International, 1986c), respectively. These references report a maximum ground-water velocity of 84 ft/year for the Rocky Flats Alluvium and a maximum ground-water velocity of 9 ft/year for the Walnut Creek valley fill alluvium.

Ground-water quality data for the Solar Evaporation Pond alluvial wells are presented in Attachment C. These data include volatile organic, metal, radionuclide, and inorganic results for the initial 1986 sampling and the four quarters of 1987 where available.



EXPLANATION

5186 Monitor Well Location, Well Identification,
6069.66 and Elevation of Water Table
(feet above msl)

6050 Lines of Equal Water Table Elevation
(feet above msl).

Hatching Lines indicate flow direction.

Contour Interval = 10 feet

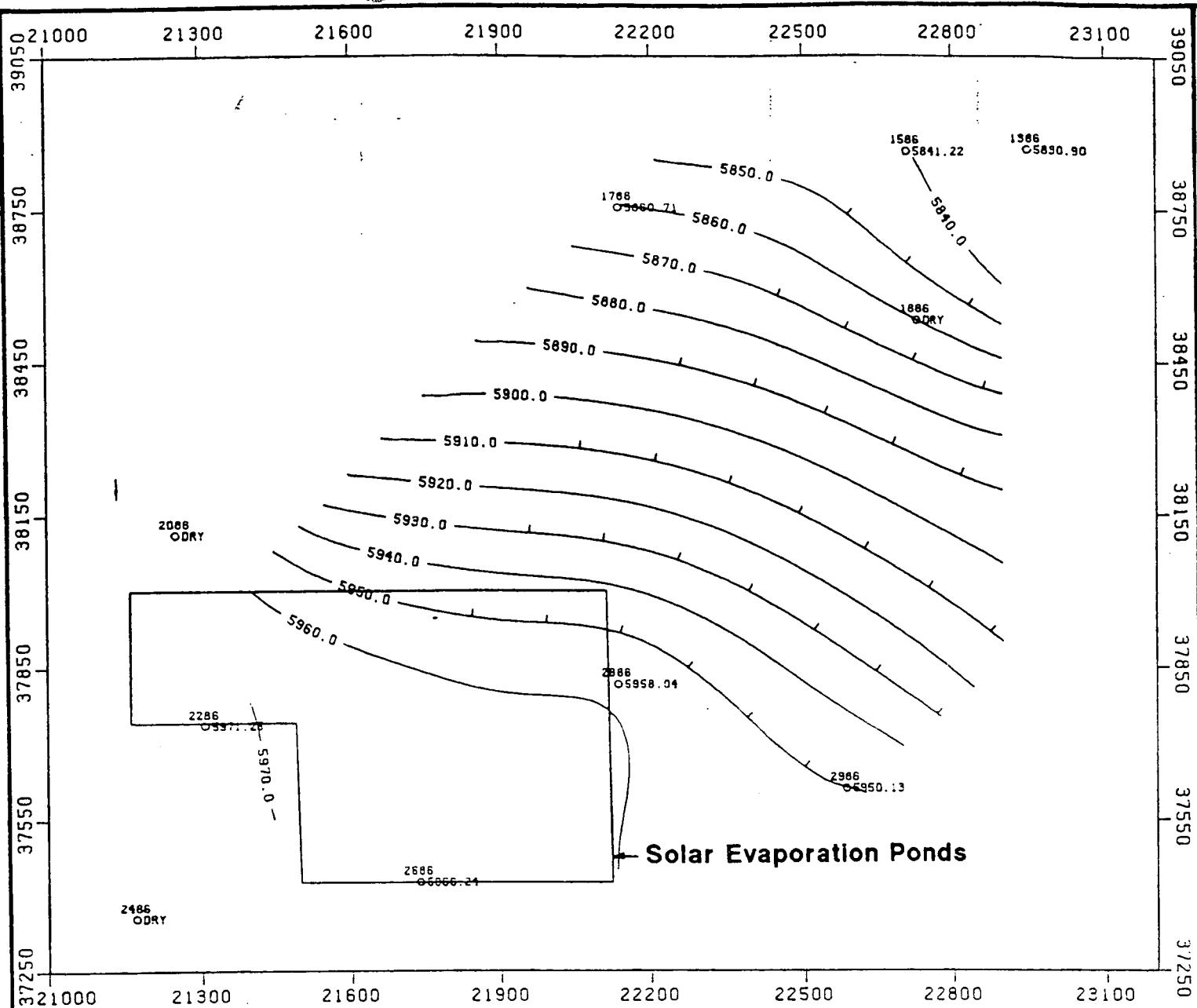
Scale: 1'=300'



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Figure 9
**Water Table Elevations at the
Solar Evaporation Ponds for
April, 1987**

31 MARCH 1988



EXPLANATION

5186 Monitor Well Location, Well Identification,
O and Elevation of Water Table
6069.66 (feet above msl)

6050 Lines of Equal Water Table Elevation
(feet above msl).

Hatchure Lines indicate flow direction.

Contour Interval = 10 feet

Scale: 1"=300'

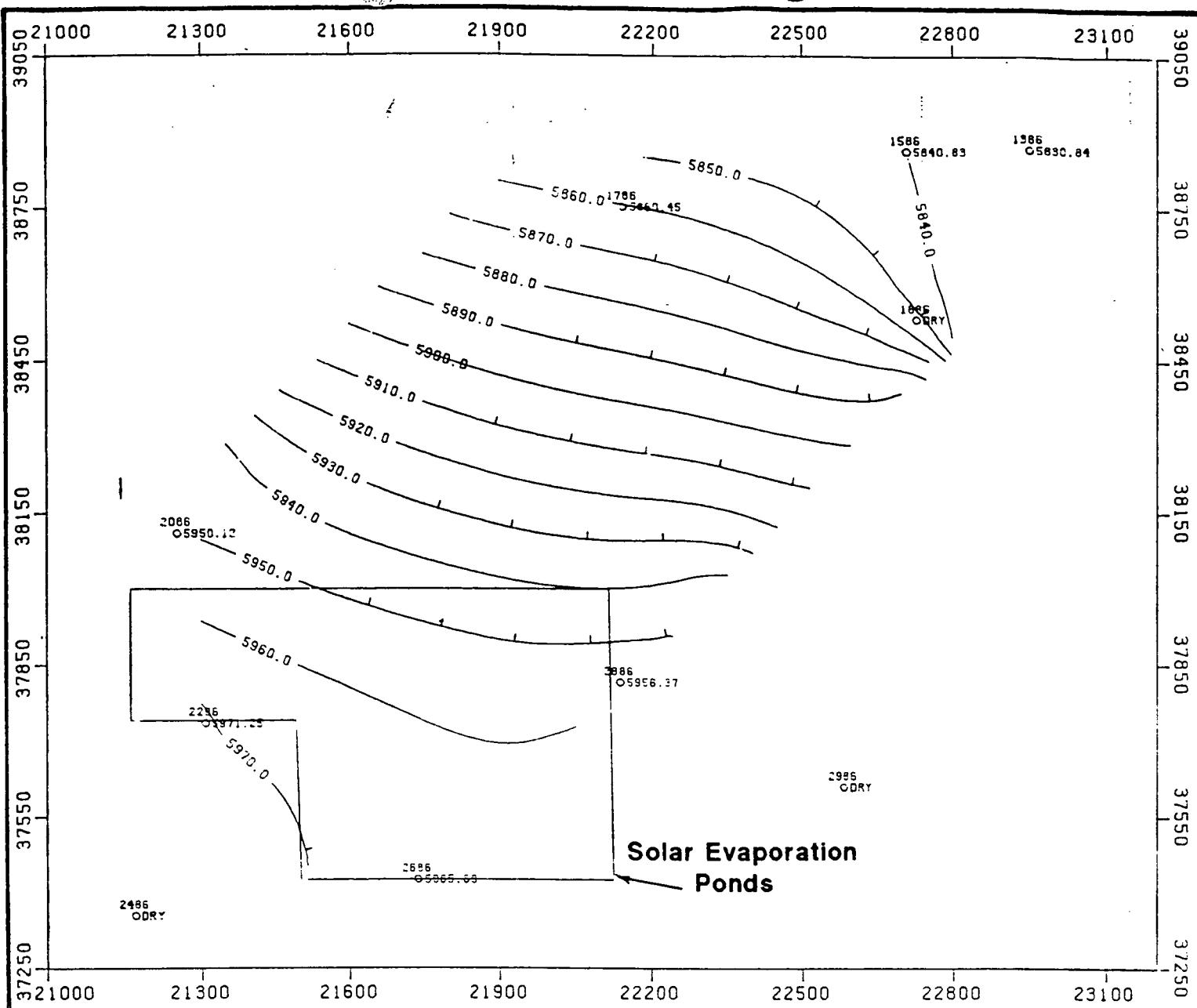


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Lakewood, CO 80228
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Figure 10

Water Table Elevations at the
Solar Evaporation Ponds for
June, 1987

31 MARCH 1988



EXPLANATION

5186 Monitor Well Location, Well Identification,
and Elevation of Water Table
(feet above msl)

6050 Lines of Equal Water Table Elevation
(feet above msl).

Hatchure Lines indicate flow direction.

Contour Interval = 10 feet

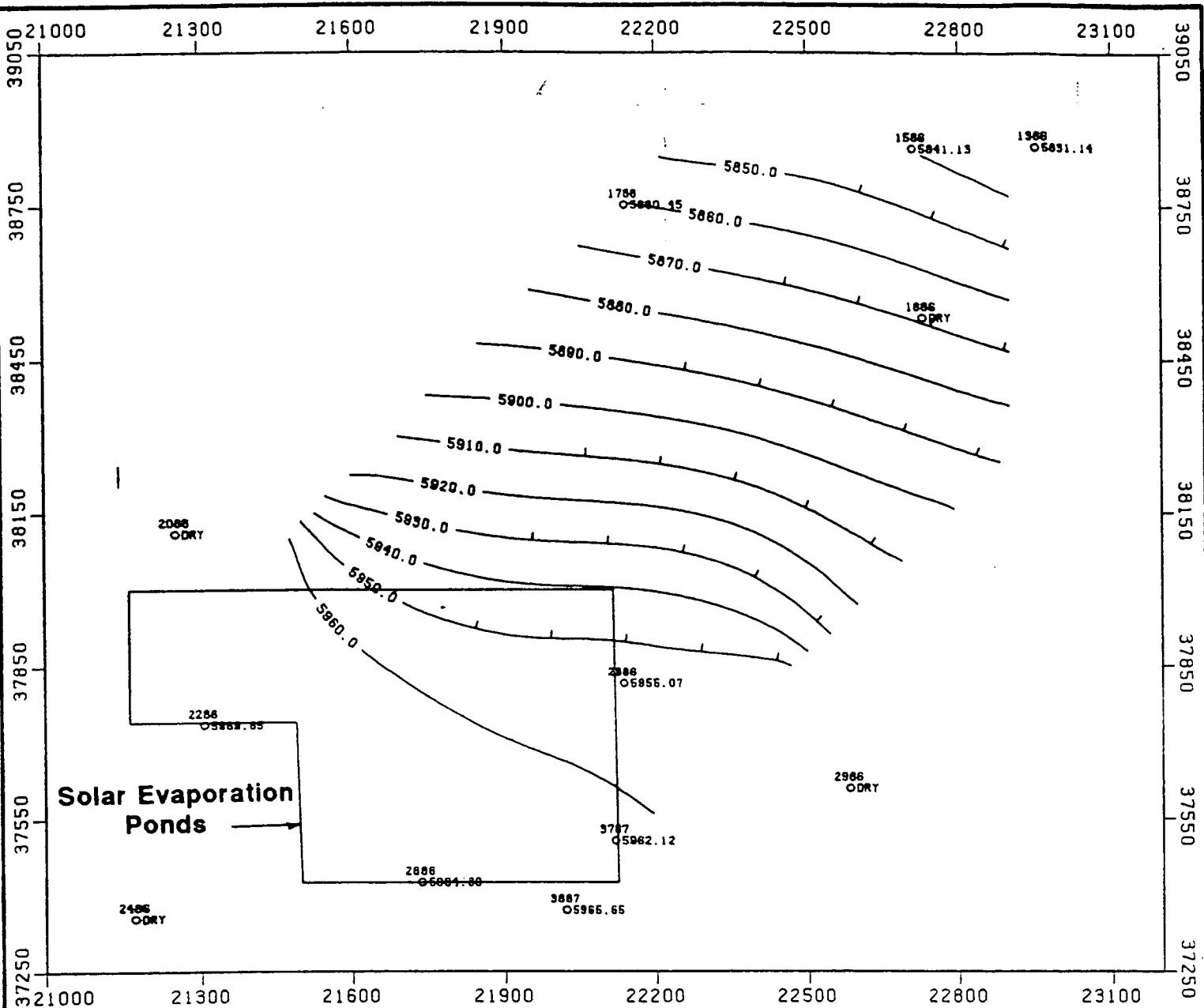
Scale: 1"=300'



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Lakewood, CO 80228
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Figure 11
Water Table Elevations at the
Solar Evaporation Ponds for
August, 1987

31 MARCH 1988



EXPLANATION

5186 Monitor Well Location, Well Identification,
o
6069.66 and Elevation of Water Table
 (feet above msl)

6050 Lines of Equal Water Table Elevation
(feet above msl).

Hatchure Lines indicate flow direction.

Contour Interval = 10 feet

Scale: 1"=300'



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Figure 12

Water Table Elevations at the Solar Evaporation Ponds for November, 1987

31 MARCH 1988

REFERENCES

- DOE, 1987a, Comprehensive Environmental Assessment and Response Program Phase 2: Rocky Flats Plant, Draft Installation Generic Monitoring Plan; U.S. Department of Energy.
- DOE, 1987b, Comprehensive Environmental Assessment and Response Program, Phase 2: Rocky Flats Plant, Draft Site Specific Monitoring Plan for High Priority Sites; U.S. Department of Energy.
- EPA, 1985, Ground Water Technical Enforcement Guidance Document, Draft, Office of Solid Waste and Emergency Response, Environmental Protection Agency, March 21, 1985.
- Robson, S.G., J.C. Romero, and S. Zawistowski, 1981, Geologic Structure, Hydrology, and Water Quality of the Arapahoe Aquifer in the Denver Basin, Colorado: U.S. Geological Survey Atlas HA-647.
- Rockwell International, 1986a, Resource Conservation and Recovery Act Part B - Operating Permit Application for USDOE Rocky Flats Plant, Hazardous and Radioactive Mixed Wastes; U.S. Department of Energy, unnumbered report.
- Rockwell International, 1986b, Draft Work Plan, Geological and Hydrological Site Characterization; U.S. Department of Energy, Rocky Flats Plant, Golden, Colorado, July 21, 1986.
- Rockwell International, 1986c, Resource Conservation and Recovery Act Part B - Post-Closure Care Permit Application for U.S. DOE Rocky Flats Plant, Hazardous and Radioactive Mixed Wastes; U.S. Department of Energy, unnumbered report.
- Rockwell International, 1987, 903 Pad, Mound, and East Trenches Areas Remedial Investigation Report, U.S. Department of Energy, Rocky Flats Plant, Golden, Colorado.

ATTACHMENT A

ALTERNATE GROUND-WATER MONITORING PROGRAM RESULTS

WEST SPRAY FIELD

Groundwater Sample Information

For Regulated Units at Rocky Flats Plant

ABURKUUR PARAHET RES CORONATION IFAG SUS QAR VALIE WIAVILIE

best spray field alluvial wells upgrade

ELI	SAMPLE NUMBER	DATE	TYPE	PH	ALKALINITY (mg/L)	SPECI CONC.	VOLATILE SPECI CONC.	METALS	ORGANICS	HALOGENICS	EST SPRAY FILTER ALUVIAL MELTS UPGRADING
	L1110 PERMIT 1183										LARURATORY BACIN MELTS

Groundwater Volatile Organic Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloroform	1,2-Dichloro ethane	2-Butanone	1,1,1-Trichloro ethane	Carbon Tetra chloride	Vinyl Acetate	Bromo dichloro methane	1,2-Dichloro propane	Trans-1,3-Dichloro propene	Trichloro ethene
West Spray Field Alluvial Wells Upgradient														
1081	6108108860	08/08/86		ug/l	5 U	5 U	6 B	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1081	10-81-05-11-87	05/11/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1081	10-81-06-18-87	06/18/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1081	10-81-08-20-87	08/20/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
1081	10-81-01-12-88	01/12/88	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
5186	6518611860	11/07/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
5186	51-86-05-13-87	05/13/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
5186	51-86-06-17-87	06/17/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
5186	51-86-06-17-87	06/17/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
5186	51-86-08-19-87	08/19/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
5186	51-86-12-10-87	12/10/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
West Spray Field Alluvial Wells Downgradient														
4986	6498611860	11/24/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4986	49-86-04-08-87	04/08/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4986	49-86-06-18-87	06/18/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4986	49-86-08-24-87	08/24/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
4986	49-86-12-14-87	12/14/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
5086	6508610860	10/31/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
5086	6508610862	10/31/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
5086	50-86-05-11-87	05/11/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
5086	50-86-06-16-87	06/16/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
5086	50-86-08-14-87	08/14/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
5086	50-86-12-10-87	12/10/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4786	6478611860	11/07/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4786	6478611862	11/07/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4786	47-86-05-13-87	05/13/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4786	47-86-06-22-87	06/22/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4786	47-86-08-13-87	08/13/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
4786	47-86-10-05-87	10/05/87		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4786	47-86-10-05-87	10/05/87	4	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
4586	6458610860	10/16/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4586	6458610862	10/16/86		ug/l	5 U	5 U	6 J	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4586	45-86-05-15-87	05/14/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4586	45-86-06-12-87	06/12/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4586	45-86-08-14-87	08/14/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
4586	45-86-09-30-87	09/30/87		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
4586	45-86-10-01-87	10/01/87		ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

Groundwater Volatile Organic Results

or Regulated Units at Rocky Flats Plant

West Spray Field Alluvial Wells Upgrade

West Spray Field Alluvial Wells Downgradient

www.sipolymer.com | 1-800-338-7639 | 800-338-7639

NA : Insufficient material in well for analysis

B : Please see the [FAQ](#) for more information.

NA : Insufficient material in well for analysis

Notes: NR = Analyte not reported

NA : Insufficient material in well for analysis

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Toluene	Chloro benzene	Ethyl benzene	Styrene	Total Xylenes
West Spray Field Alluvial Wells Upgradient									
1081	G108108860	08/08/86		ug/l	S U	S U	S U	S U	0 U
1081	10-81-05-11-87	05/11/87	1	ug/l	NR	NR	NR	NR	NR
1081	10-81-06-18-87	06/18/87	2	ug/l	NR	NR	NR	NR	NR
1081	10-81-08-20-87	08/20/87	3	ug/l	NR	NR	NR	NR	NR
1081	10-81-01-12-88	01/12/88	4	ug/l	S U	S U	S U	S U	S U
5186	G518611860	11/07/86		ug/l	2 J	S U	S U	S U	S U
5186	51-86-05-13-87	05/13/87	1	ug/l	NR	NR	NR	NR	NR
5186	51-86-06-17-87	06/17/87	2	ug/l	NR	NR	NR	NR	NR
5186	51-86-06-17-87	06/17/87	2	ug/l	NR	NR	NR	NR	NR
5186	51-86-08-19-87	08/19/87	3	ug/l	NR	NR	NR	NR	NR
5186	51-86-12-10-87	12/10/87	4	ug/l	S U	S U	S U	S U	S U
West Spray Field Alluvial Wells Downgradient									
4986	G498611860	11/24/86		ug/l	S U	S U	S U	S U	S U
4986	49-86-04-08-87	04/08/87	1	ug/l	NR	NR	NR	NR	NR
4986	49-86-06-18-87	06/18/87	2	ug/l	NR	NR	NR	NR	NR
4986	49-86-08-24-87	08/24/87	3	ug/l	NR	NR	NR	NR	NR
4986	49-86-12-14-87	12/14/87	4	ug/l	S U	S U	S U	S U	S U
5086	G508610860	10/31/86		ug/l	S U	S U	S U	S U	S U
5086	G508610862	10/31/86		ug/l	S U	S U	S U	S U	S U
5086	50-86-05-11-87	05/11/87	1	ug/l	NR	NR	NR	NR	NR
5086	50-86-06-16-87	06/16/87	2	ug/l	NR	NR	NR	NR	NR
5086	50-86-08-14-87	08/14/87	3	ug/l	NR	NR	NR	NR	NR
5086	50-86-12-10-87	12/10/87	4	ug/l	S U	S U	S U	S U	S U
4786	G478611860	11/07/86		ug/l	S U	S U	S U	S U	S U
4786	G478611862	11/07/86		ug/l	3 J	S U	S U	S U	S U
4786	47-86-05-13-87	05/13/87	1	ug/l	NR	NR	NR	NR	NR
4786	47-86-06-22-87	06/22/87	2	ug/l	NR	NR	NR	NR	NR
4786	47-86-08-13-87	08/13/87	3	ug/l	NR	NR	NR	NR	NR
4786	47-86-10-05-87	10/05/87		ug/l	S U	S U	S U	S U	S U
4786	47-86-10-05-87	10/05/87	4	ug/l	NR	NR	NR	NR	NR
4586	G458610860	10/16/86		ug/l	S U	S U	1 J	S U	S U
4586	G458610862	10/16/86		ug/l	S U	S U	2 J	S U	S U
4586	45-86-05-15-87	05/14/87	1	ug/l	NR	NR	NR	NR	NR
4586	45-86-06-12-87	06/12/87	2	ug/l	NR	NR	NR	NR	NR
4586	45-86-08-14-87	08/14/87	3	ug/l	NR	NR	NR	NR	NR
4586	45-86-09-30-87	09/30/87		ug/l	S U	S U	S U	S U	S U
4586	45-86-10-01-87	10/01/87			NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	ug/l	NR	NR	NR	NR	NR

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Metals Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr. Units	Silver (Ag), total	Aluminum (Al), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Calcium (Ca), total	Cadmium (Cd), total	Chromium (Cr), total	Cesium (Cs), total	
West Spray Field Alluvial Wells Upgradient													
1081	6108108860	08/08/86	Ag1	0.010 U	0.680	0.001 U	0.100 U	0.037	18,000	0.005 U	0.100	0.002 U	
1081	10-81-05-11-87	05/11/87	Ag1	0.0076 U	0.0433	0.01 U	0.1354	0.005 U	14,6231	0.005 U	0.0220 U	0.2 U	
1081	10-81-06-18-87	06/18/87	Ag1	0.0076 U	0.0790	0.01 U	0.0461	0.005 U	17,2756	0.005 U	0.0220 U	0.2 U	
1081	10-81-08-20-87	08/20/87	3	Ag1	0.0076 U	0.0400	0.005 U	0.1010	0.005 U	17,7583	0.001 U	0.0220 U	0.02 U
1081	10-81-01-12-88	01/12/88	4	Ag1	0.0076 U	0.0290	0.005 U	0.0836	0.002 J	15,4546	0.018	0.0220 U	0.0100 U
5186	6518611860	11/07/86	Ag1	0.0099 U	0.100	0.010 U	0.010 U	0.005 U	12.2	0.008	0.025 U	0.0277	0.150 U
5186	51-86-05-13-87	05/13/87	1	Ag1	0.0076 U	0.1042	0.0100 U	0.1300	0.005 U	23,0047	0.0050 U	0.0220 U	0.0100 U
5186	51-86-06-17-87	06/17/87	2	Ag1	0.0076 U	0.0290	0.001 U	0.0514	0.005 U	19,1503	0.005 U	0.0220 U	0.0100 U
5186	51-86-06-17-87	06/17/87	2	Ag1	0.0076 U	0.0290	0.01 U	0.0514	0.005 U	19,1503	0.005 U	0.0220 U	0.0100 U
5186	51-86-06-19-87	06/19/87	3	Ag1	0.0076 U	0.0290	0.005 U	0.1502	0.005 U	18,9247	0.001 U	0.0220 U	0.0113
5186	51-86-06-19-87	06/19/87	4	Ag1	0.0076 U	0.0290	0.005 U	0.0745	MR	15,8726	0.005 U	0.0220 U	0.0152
West Spray Field Alluvial Wells Downgradient													
4986	6498611860	11/24/86	Ag1	0.0099 U	0.100	0.010 U	0.116	0.005 U	35,200	0.005 U	0.020 U	0.010 U	
4986	49-86-04-08-87	04/08/87	1	Ag1	0.0076 U	0.2107	0.0100 U	0.5183	0.005 U	34,7669	0.0050 U	0.0220 U	0.0100 U
4986	49-86-06-18-87	06/18/87	2	Ag1	0.0076 U	0.0290	0.01 U	0.0551	0.005 U	29,4658	0.005 U	0.0220 U	0.0100 U
4986	49-86-08-24-87	08/24/87	3	Ag1	0.0076 U	0.0192	0.005 U	0.1204	0.005 U	20,5111	0.001 U	0.0220 U	0.0100 U
4986	49-86-12-14-87	12/14/87	4	Ag1	0.0076 U	0.0473	MR	0.1016	MR	14,8498	MR	0.0220 U	0.0100 U
5086	6508610860	10/31/86	Ag1	0.010 U	0.190	0.010 U	0.190	0.005 U	30,000	0.005 U	0.025 U	0.010 U	
5086	6508610862	10/31/86	Ag1	0.010 U	0.100	0.010 U	0.080	0.005 U	30,20	0.005 U	0.025 U	0.010 U	
5086	50-86-05-11-87	05/11/87	1	Ag1	0.0076 U	0.0561	0.0100 U	0.1558	0.005 U	36,4507	0.0011	0.0220 U	0.1356
5086	50-86-06-16-87	06/16/87	2	Ag1	0.0076 U	0.0290	0.01 U	0.0597	0.005 U	34,4230	0.005 U	0.0220 U	0.0100 U
5086	50-86-08-14-87	08/14/87	3	Ag1	0.0076 U	0.0290	0.005 U	0.0822	0.005 U	31,0017	0.001 U	0.0220 U	0.0114
5086	50-86-12-10-87	12/10/87	4	Ag1	0.0076 U	0.5834	0.005 U	0.1607	MR	30,4438	MR	0.0220 U	0.0148
4786	6478611860	11/01/86	Ag1	0.0099 U	0.100	0.010 U	0.100	0.005 U	15,400	0.007	0.025 U	0.010 U	
4786	6478611862	11/01/86	Ag1	0.0099 U	0.100	0.010 U	0.100	0.005 U	16,30	0.008	0.025 U	0.027	
4786	47-86-05-13-87	05/13/87	1	Ag1	0.0076 U	0.0290	0.01 U	0.0653	0.005 U	21,8236	0.005 U	0.0220 U	0.0100 U
4786	47-86-06-22-87	06/22/87	2	Ag1	0.0076 U	0.0290	0.01 U	0.0474	0.005 U	19,1714	0.005 U	0.0220 U	0.0100 U
4786	47-86-06-13-87	06/13/87	3	Ag1	0.0076 U	0.0290	0.005 U	0.1017	0.005 U	18,6199	0.001 U	0.0220 U	0.0100 U
4786	47-86-10-05-87	10/05/87	4	Ag1	0.0076 U	MR	MR	MR	MR	MR	MR	0.0220 U	0.0100 U
4786	47-86-10-05-87	10/05/87	4	Ag1	0.0076 U	0.0290	0.005 U	0.0497	0.005 U	16,4384	0.001 U	0.0220 U	0.0100 U
4786	47-86-05-13-87	05/13/87	1	Ag1	0.010 U	0.480	0.002 U	0.160	0.011	26.2	0.005 U	0.010 U	0.0150 U
4786	47-86-06-22-87	06/22/87	2	Ag1	0.010 U	0.550	0.002 U	0.150	0.007	25.5	0.005 U	0.010 U	0.0150 U
4786	47-86-05-15-87	05/14/87	1	Ag1	0.0076 U	0.1786	0.0100 U	0.3398	0.005 U	11,5612	0.0050 U	0.0220 U	0.0100 U
4786	47-86-06-12-87	06/12/87	2	Ag1	0.0076 U	0.0405	0.01 U	0.0255	0.005 U	9,0966	0.005 U	0.0220 U	0.0100 U
4786	45-86-08-14-87	08/14/87	3	Ag1	0.0076 U	0.0272	0.005 U	0.0615	0.005 U	10,0892	0.001 U	0.0220 U	0.0115
4786	45-86-09-30-87	09/30/87	4	Ag1	0.0076 U	MR	MR	MR	MR	MR	MR	0.0220 U	0.0100 U
4786	45-86-10-01-87	10/01/87	4	Ag1	0.0076 U	0.0336	0.005 U	0.0556	0.005 U	12,8762	0.001 U	0.0220 U	0.0100 U

Notes: MR : Analyte not reported
NA : Insufficient water in well for analysis

U : Analyzed but not detected
J : Present below detection limit

Groundwater Metals Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Copper (Cu), total	Iron (Fe), total	Mercury (Hg), total	Potassium (K), total	Lithium (Li), total	Magnesium (Mg), total	Manganese (Mn), total	Molybdenum (Mo), total	Sodium (Na), total	Nickel (Ni), total
West Spray Field Alluvial Wells Upgradient														
1081	6108108860	08/08/86		mg/l	0.020 U	0.270	0.0007	0.560	NR	6.600	0.010 U	0.510	11.000	0.077
1081	10-81-05-11-87	05/11/87	1	mg/l	0.0090	0.0282	0.0002 U	5.0 U	NR	2.7824	0.0051 U	0.0220 U	10.6409	0.0370 U
1081	10-81-06-18-87	06/18/87	2	mg/l	0.0063 U	0.0144	0.002 U	5.0 U	NR	2.9793	0.0051 U	0.0220 U	9.5838	0.0370 U
1081	10-81-08-20-87	08/20/87	3	mg/l	0.0099	0.0246	0.0002 U	1.0	NR	3.3620	0.0051 U	0.0220 U	14.4885	0.0370 U
1081	10-81-01-12-88	01/12/88	4	mg/l	0.0063 U	0.0317	0.0002	NR	NR	2.9601	0.0051 U	0.0220 U	10.0773	0.0370 U
5186	6518611860	11/07/86		mg/l	0.023	0.075 U	0.0002 U	1.07	NR	0.00192	0.071	0.100 U	21.4 U	0.029
5186	51-86-05-13-87	05/13/87	1	mg/l	0.0174 U	0.0711	0.0002 U	5.0 U	NR	4.5871	0.0265	0.0220 U	14.6574	0.0370 U
5186	51-86-06-17-87	06/17/87	2	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	3.3494	0.0065	0.0220 U	9.4233	0.0370 U
5186	51-86-06-17-87	06/17/87	2	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	3.3494	0.0065	0.0220 U	9.4233	0.0370 U
5186	51-86-08-19-87	08/19/87	3	mg/l	0.0063 U	0.5748	0.0002 U	0.6	NR	3.4800	0.0242	0.0220 U	16.3487	0.0370 U
5186	51-86-12-10-87	12/10/87	4	mg/l	0.0141	0.0669	0.0002 U	NR	NR	2.9424	0.0051 U	0.0220 U	9.5898	0.0370 U
West Spray Field Alluvial Wells Downgradient														
4986	6498611860	11/24/86		mg/l	0.020 U	0.075 U	0.0002 U	1.000 U	NR	7.640	0.476	0.100 U	29.500	0.020 U
4986	49-86-04-08-87	04/08/87	1	mg/l	0.0063 U	0.0293	0.0002 U	5.0 U	NR	7.3621	0.2289	0.0220 U	36.0378	0.0370 U
4986	49-86-06-18-87	06/18/87	2	mg/l	0.0063 U	0.0078	0.0002 U	5.0 U	NR	5.6582	0.0248	0.0220 U	27.8577	0.0370 U
4986	49-86-08-24-87	08/24/87	3	mg/l	0.0084	0.0211	0.0002 U	1.3	NR	4.3797	0.0210	0.0220 U	26.6908	0.0370 U
4986	49-86-12-14-87	12/14/87	4	mg/l	0.0080	0.0406	NR	NR	NR	2.8133	0.0051 U	0.0220 U	21.2591	0.0370 U
5086	6508610860	10/31/86		mg/l	0.025 U	0.181	0.0002 U	1.490	NR	5.430	0.347	0.100 U	12.100	0.020 U
5086	6508610862	10/31/86		mg/l	0.020 U	0.076	0.0002 U	2.160	NR	5.340	0.374	0.100 U	11.70	0.020 U
5086	50-86-05-11-87	05/11/87	1	mg/l	0.0261	0.5953	0.0002 U	5.0 U	NR	5.3889	0.1940	0.0220 U	12.9888	0.0701
5086	50-86-06-16-87	06/16/87	2	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	5.1092	0.0051 U	0.0220 U	9.6210	0.0370 U
5086	50-86-08-14-87	08/14/87	3	mg/l	0.0063 U	0.0106	0.0002 U	0.8	NR	5.0253	0.0051 U	0.0220 U	10.7212	0.0370 U
5086	50-86-12-10-87	12/10/87	4	mg/l	0.0383	0.4740	0.0002 U	NR	NR	4.8416	0.0051 U	0.0220 U	10.2008	0.0370 U
4786	6478611860	11/07/86		mg/l	0.020 U	0.075 U	0.0002 U	1.000 U	NR	2.230	0.086	0.100 U	16.400	0.020 U
4786	6478611862	11/07/86		mg/l	0.020 U	0.075 U	0.0002 U	1.040	NR	1.990	0.093	0.100 U	14.700	0.020 U
4786	47-86-05-13-87	05/13/87	1	mg/l	0.0087	0.0069 U	0.0002 U	5.0 U	NR	3.8325	0.0325	0.0220 U	15.6347	0.0370 U
4786	47-86-06-22-87	06/22/87	2	mg/l	0.0063 U	0.0147	0.003	5.0 U	NR	3.1143	0.0263	0.0220 U	13.0281	0.0370 U
4786	47-86-08-13-87	08/13/87	3	mg/l	0.0068	0.0149	0.0002 U	0.5	NR	3.1834	0.0192	0.0220 U	17.2126	0.0370 U
4786	47-86-10-05-87	10/05/87		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4786	47-86-10-05-87	10/05/87	4	mg/l	0.0063 U	0.0069 U	0.0002 U	0.57	0.1 U	2.8904	0.0139	0.0220 U	13.2303	0.0370 U
4586	6458610860	10/16/86		mg/l	0.020 U	0.252	0.00021	0.623	NR	5.90	0.079	0.100 U	13.4	0.040 U
4586	6458610862	10/16/86		mg/l	0.020 U	0.242	0.0016	0.540	NR	5.40	0.091	0.100 U	13.9	0.040 U
4586	45-86-05-15-87	05/14/87	1	mg/l	0.0063 U	0.0948	0.0002 U	5.0 U	NR	2.6072	0.0141	0.0220 U	7.3332	0.0370 U
4586	45-86-06-12-87	06/12/87	2	mg/l	0.0063 U	0.0311	0.0002 U	5.0 U	NR	2.1295	0.0051 U	0.0220 U	6.5707	0.0370 U
4586	45-86-08-14-87	08/14/87	3	mg/l	0.0068 U	0.0495	0.0002 U	0.6	NR	2.3749	0.0062	0.0220 U	10.7756	0.0370 U
4586	45-86-09-30-87	09/30/87		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	mg/l	0.0063 U	0.0143	0.0002 U	0.67	0.1 U	3.2490	0.0051 U	0.0220 U	10.8467	0.0370 U

Notes: NR = Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

J : Present below detection limit

Groundwater Metals Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Lead (Pb), total	Antimony (Sb), total	Selenium (Se), total	Strontium (Sr), total	Boron (B), total	Vanadium (V), total	Zinc (Zn), total
West Spray Field Alluvial Wells Upgradient											
1081	G108108860	08/08/86		mg/l	0.005 U	0.020 U	0.002 U	0.068	0.007	0.850	0.020
1081	10-81-05-11-87	05/11/87	1	mg/l	0.005 U	0.0600 U	0.0050 U	0.0832	0.01 U	0.0240 U	0.04
1081	10-81-06-18-87	06/18/87	2	mg/l	0.010	0.06 U	0.005 U	0.0908	0.01 U	0.0245	0.0200 U
1081	10-81-08-20-87	08/20/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.0963	0.01 U	0.0240 U	0.1858
1081	10-81-01-12-88	01/12/88	4	mg/l	NR	0.02 U	0.004 J	0.0845	NR	0.0240 U	0.0398
5186	G518611860	11/07/86		mg/l	0.005 U	0.060 U	0.005 U	0.080 U	0.010 U	0.025 U	0.039
5186	51-86-05-13-87	05/13/87	1	mg/l	0.0050 U	0.06 U	0.005 U	0.1227	0.0100 U	0.0240 U	0.07
5186	51-86-06-17-87	06/17/87	2	mg/l	0.036	0.06 U	0.005 U	0.0913	0.01 U	0.0240 U	0.0200 U
5186	51-86-06-17-87	06/17/87	2	mg/l	0.036	0.06 U	0.005 U	0.0913	0.01 U	0.0240 U	0.0200 U
5186	51-86-08-19-87	08/19/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.0984	0.01 U	0.0240 U	0.0336
5186	51-86-12-10-87	12/10/87	4	mg/l	NR	NR	0.005 U	0.0929	NR	0.0240 U	0.0200 U
West Spray Field Alluvial Wells Downgradient											
4986	G498611860	11/24/86		mg/l	0.005 U	0.055 U	0.005 U	0.205	0.010 U	0.025 U	0.020 U
4986	49-86-04-08-87	04/08/87	1	mg/l	0.0050 U	0.06 U	0.005 U	0.1843	0.0100 U	0.0240 U	0.49
4986	49-86-06-18-87	06/18/87	2	mg/l	0.020	0.06 U	0.005 U	0.1487	0.01 U	0.0240 U	0.0200 U
4986	49-86-08-24-87	08/24/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.1356	0.01 U	0.0240 U	0.0267
4986	49-86-12-14-87	12/14/87	4	mg/l	NR	NR	NR	0.0771	NR	0.0240 U	0.0200 U
5086	G508610860	10/31/86		mg/l	0.054	0.060 U	0.005 U	0.164	0.010 U	0.025 U	0.063
5086	G508610862	10/31/86		mg/l	0.016	0.060 U	0.005 U	0.150	0.010 U	0.025 U	0.036
5086	50-86-05-11-87	05/11/87	1	mg/l	0.0050 U	0.06 U	0.005 U	0.1750	0.0100 U	0.0240 U	0.07
5086	50-86-06-16-87	06/16/87	2	mg/l	0.015	0.06 U	0.005 U	0.1768	0.01 U	0.0240 U	0.0200 U
5086	50-86-08-14-87	08/14/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.1791	0.01 U	0.0240 U	0.0237
5086	50-86-12-10-87	12/10/87	4	mg/l	NR	NR	0.005 U	0.1834	NR	0.0240 U	0.0269
4786	G478611860	11/07/86		mg/l	0.005 U	0.060 U	0.005 U	0.080 U	0.005 U	0.025 U	0.047
4786	G478611862	11/07/86		mg/l	0.005 U	0.060 U	0.005 U	0.080 U	0.010 U	0.025 U	0.054
4786	47-86-05-13-87	05/13/87	1	mg/l	0.005 U	0.0600 U	0.0050 U	0.1075	0.01 U	0.0240 U	0.02
4786	47-86-06-22-87	06/22/87	2	mg/l	0.036	0.06 U	0.005 U	0.0933	0.01 U	0.0275	0.0200 U
4786	47-86-08-13-87	08/13/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.0998	0.01 U	0.0240 U	0.0264
4786	47-86-10-05-87	10/05/87		NA	NA	NA	NA	NA	NA	NA	NA
4786	47-86-10-05-87	10/05/87	4	mg/l	0.005 U	0.02 U	0.005 U	0.0903	0.01 U	0.0240 U	0.0200 U
4586	G458610860	10/16/86		mg/l	0.005 U	0.050 U	0.002 U	0.190	0.010 U	0.025 U	0.006
4586	G458610862	10/16/86		mg/l	0.005 U	0.050 U	0.002 U	0.193	0.010 U	0.025 U	0.005 U
4586	45-86-05-15-87	05/14/87	1	mg/l	0.0050 U	0.06 U	0.005 U	0.0633	0.0100 U	0.0240 U	0.02 U
4586	45-86-06-12-87	06/12/87	2	mg/l	0.011	0.06 U	0.005 U	0.0550	0.01 U	0.0240 U	0.0200 U
4586	45-86-08-14-87	08/14/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.0617	0.01 U	0.0240 U	0.0498
4586	45-86-09-30-87	09/30/87		NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87		NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	mg/l	0.002 J	0.011 J	0.005 U	0.0847	0.01 U	0.0334	0.0200 U

Notes: NA = Analyte not reported

U = Analyzed but not detected

B = Present in laboratory blank

NA = Insufficient water in well for analysis

J = Present below detection limit

Groundwater Inorganic Results for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Chloride		Cyanide, Total		Fluoride		Nitrate-Nitrite-Nitrogen		Sulfate		Total Dissolved Solids		HCO3-	
West Spray Field Alluvial Wells Upgradient																	
1081	6108108860	08/08/86		5.7	mg/l	0.0016	U	NR		2.00	mg/l	3	U	128	mg/l	19	mg/l
1081	10-81-05-11-87	05/11/87	1	8.60	mg/l	1.0	U	NR		7.30	mg/l	20.0	mg/l	123	mg/l	28.0	mg/l
1081	10-81-06-18-87	06/18/87	2	444	mg/l	1.0	U	NR		7.65	mg/l	22.0	mg/l	140	mg/l	36.9	mg/l
1081	10-81-08-20-87	08/20/87	3	3.79	mg/l	1	U	NR		6.10	mg/l	21.0	mg/l	163	mg/l	39	mg/l
1081	10-81-01-12-88	01/12/88	4	5.69	mg/l		NR					23.5	mg/l	152	mg/l	46.4	mg/l
5186	6518611860	11/07/86		7.3	mg/l	0.005	U	NR				31	mg/l	277	mg/l	3	U
5186	51-86-05-13-87	05/13/87	1	5.70	mg/l	1.0	U	NR		4.65	mg/l	31.0	mg/l	145	mg/l	36.0	mg/l
5186	51-86-06-17-87	06/17/87	2	5.00	mg/l	1.0	U	NR		4.60	mg/l	28.0	mg/l	141	mg/l	31.6	mg/l
5186	51-86-06-17-87	06/17/87	2	5.00	mg/l	1.0	U	NR		4.60	mg/l	28.0	mg/l	141	mg/l	31.6	mg/l
5186	51-86-08-19-87	08/19/87	3	4.75	mg/l	1	U	NR		5.15	mg/l	26.5	mg/l	149	mg/l	38.5	mg/l
5186	51-86-12-10-87	12/10/87	4	5.20	mg/l		NR			3.45	mg/l	190	mg/l	126	mg/l	46.2	mg/l
West Spray Field Alluvial Wells Downgradient																	
4986	6498611860	11/24/86		30	mg/l	0.005	U	NR		9.10	mg/l	29	mg/l	477	mg/l	7.0	mg/l
4986	49-86-04-08-87	04/08/87	1	20.2	mg/l	1.0	U	NR		16.3	mg/l	150	mg/l	264	mg/l	32.8	mg/l
4986	49-86-06-18-87	06/18/87	2	23.7	mg/l	1.0	U	NR		12.6	mg/l	30.5	mg/l	269	mg/l	34.0	mg/l
4986	49-86-08-24-87	08/24/87	3	30.6	mg/l	1	U	NR		6.58	mg/l	19.0	mg/l	201	mg/l	41	mg/l
4986	49-86-12-14-87	12/14/87	4	13.3	mg/l		NR					1340	mg/l	309	mg/l	48.0	mg/l
5086	6508610860	10/31/86		7.6	mg/l	0.01	U	NR				16	mg/l	200	mg/l	130	mg/l
5086	6508610862	10/31/86		9.5	mg/l	0.01	U	NR				16	mg/l	210	mg/l	NR	
5086	50-86-05-11-87	05/11/87	1	10.4	mg/l	1.0	U	NR		0.87	mg/l	28.0	mg/l	167	mg/l	95.0	mg/l
5086	50-86-06-16-87	06/16/87	2	9.70	mg/l	1.0	U	NR		1.20	mg/l	13.5	mg/l	171	mg/l	92.5	mg/l
5086	50-86-08-14-87	08/14/87	3	9.70	mg/l	1	U	NR		0.87	mg/l	12.5	mg/l	159	mg/l	95.7	mg/l
5086	50-86-12-10-87	12/10/87	4	9.39	mg/l		NR			0.63	mg/l	27.4	mg/l	162	mg/l	119	mg/l
4786	6478611860	11/07/86		2.9	mg/l	0.005	U	NR				20	mg/l	264	mg/l	5.4	mg/l
4786	6478611862	11/07/86		2.7	mg/l	0.005	U	NR				18	mg/l	290	mg/l	NR	
4786	47-86-05-13-87	05/13/87	1	3.60	mg/l	1.0	U	NR		1.0	mg/l	7.80	mg/l	115	mg/l	76.0	mg/l
4786	47-86-06-22-87	06/22/87	2	2.42	mg/l	1.0	U	NR		1.10	mg/l	1.0	U	119	mg/l	76.5	mg/l
4786	47-86-08-13-87	08/13/87	3	1.96	mg/l	1	U	NR		1.2	mg/l	3.5	mg/l	118	mg/l	79.7	mg/l
4786	47-86-10-05-87	10/05/87		NA		NA		NA				NA		NA		NA	
4786	47-86-10-05-87	10/05/87	4	2.4	mg/l		NR			1.15	mg/l	2.9	mg/l	113	mg/l	79.7	mg/l
4586	6458610860	10/16/86		6.1	mg/l	0.01	U	NR				14	mg/l	180	mg/l	NR	
4586	6458610862	10/16/86		5.9	mg/l	0.01	U	NR				13	mg/l	160	mg/l	NR	
4586	45-86-05-15-87	05/14/87	1	4.90	mg/l	1.0	U	NR		0.56	mg/l	24.5	mg/l	143	mg/l	22.0	mg/l
4586	45-86-06-12-87	06/12/87	2	9.30	mg/l	1.0	U	NR		0.51	mg/l	19.0	mg/l	92.0	mg/l	18.4	mg/l
4586	45-86-08-14-87	08/14/87	3	6.39	mg/l	1	U	NR		0.75	mg/l	14.5	mg/l	124	mg/l	39.1	mg/l
4586	45-86-09-30-87	09/30/87		NA		NA		NA				NA		NA		NA	
4586	45-86-10-01-87	10/01/87		NA		NA		NA				NA		NA		NA	
4586	45-86-10-01-87	10/01/87	4	6.5	mg/l		NR			1.02	mg/l	17.5	mg/l	125	mg/l	45.1	mg/l

Notes: NB : Analyte not reviewed

NA : Analyte not reported

It is analyzed but not detected

0 : Analyzed but not detected

1 : Present below detection limit

R = Present in laboratory plant

**Groundwater Inorganic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	CO3:	Hexavalent Chromium (Cr+6)
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West Spray Field Alluvial Wells Upgradient

1081	6108108860	08/08/86		21	mg/l	NR
1081	10-81-05-11-87	05/11/87	1	NR		NR
1081	10-81-06-18-87	06/18/87	2	NR		NR
1081	10-81-08-20-87	08/20/87	3	NR		NR
1081	10-81-01-12-88	01/12/88	4	NR		NR
5186	6518611860	11/07/86		42	mg/l	NR
5186	51-86-05-13-87	05/13/87	1	NR		NR
5186	51-86-06-17-87	06/17/87	2	NR		NR
5186	51-86-06-17-87	06/17/87	2	NR		NR
5186	51-86-08-19-87	08/19/87	3	NR		NR
5186	51-86-12-10-87	12/10/87	4	NR		NR

West Spray Field Alluvial Wells Downgradient

4986	6498611860	11/24/86		45	mg/l	NR
4986	49-86-04-08-87	04/08/87	1	NR		NR
4986	49-86-06-18-87	06/18/87	2	NR		NR
4986	49-86-08-24-87	08/24/87	3	NR		NR
4986	49-86-12-14-87	12/14/87	4	NR		NR
5086	6508610860	10/31/86		5 U	mg/l	NR
5086	6508610862	10/31/86		NR		NR
5086	50-86-05-11-87	05/11/87	1	NR		NR
5086	50-86-06-16-87	06/16/87	2	NR		NR
5086	50-86-08-14-87	08/14/87	3	NR		NR
5086	50-86-12-10-87	12/10/87	4	NR		NR
4786	6478611860	11/07/86		88	mg/l	NR
4786	6478611862	11/07/86		NR		NR
4786	47-86-05-13-87	05/13/87	1	NR		NR
4786	47-86-06-22-87	06/22/87	2	NR		NR
4786	47-86-08-13-87	08/13/87	3	NR		NR
4786	47-86-10-05-87	10/05/87		NA		NA
4786	47-86-10-05-87	10/05/87	4	NR		NR
4586	6458610860	10/16/86		NR		NR
4586	6458610862	10/16/86		NR		NR
4586	45-86-05-15-87	05/14/87	1	NR		NR
4586	45-86-06-12-87	06/12/87	2	NR		NR
4586	45-86-08-14-87	08/14/87	3	NR		NR
4586	45-86-09-30-87	09/30/87		NA		NA
4586	45-86-10-01-87	10/01/87		NA		NA
4586	45-86-10-01-87	10/01/87	4	NR		NR

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

**Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Gross Alpha	Gross Beta	Uranium 233, 234	Uranium 235	Uranium 238	Strontium 89, 90	Plutonium 239, 240										
West Spray Field Alluvial Wells Upgradient																				
1081	G108108860	08/08/86		22 +/- 7	pci/l	22 +/- 3	pci/l	0.96 +/- 0.24	pci/l	NR										
1081	10-81-05-11-87	05/11/87	1	15 +/- 11	pci/l	-9 +/- 0	pci/l	.04 +/- .56	pci/l	0.0 +/- .30	pci/l	.12 +/- .40	pci/l	0.8	pci/l	.10 +/- .70	pci/l			
1081	10-81-06-18-87	06/18/87	2	5 +/- 15	pci/l	5 +/- 28	pci/l	0.0 +/- 0.57	pci/l	0.0 +/- 0.3	pci/l	0.17 +/- 0.42	pci/l	<1.0	pci/l	0.32 +/- 0.77	pci/l			
1081	10-81-08-20-87	08/20/87	3	7 +/- 17	pci/l	29 +/- 45	pci/l	0.0 +/- 1.0	pci/l	0.4 +/- 0.4	pci/l	-0.3 +/- 0.6	pci/l	<1.0	pci/l	.32 +/- .46	pci/l			
1081	10-81-01-12-88	01/12/88	4	3 +/- 4	pci/l	1 +/- 9	pci/l	.05 +/- .10	pci/l	0.00 +/- .02	pci/l	.20 +/- .12	pci/l	<1.0	pci/l	0.00 +/- .14	pci/l			
5186	G518611860	11/07/86		-1 +/- 4	pci/l	7 +/- 5	pci/l	1.8 +/- 0.4	pci/l	NR	2.4 +/- 0.5	pci/l	NR	0.06 +/- 0.11	pci/l	0.03 +/- 0.06	pci/l			
5186	51-86-05-13-87	05/13/87	1	28 +/- 24	pci/l	11 +/- 7	pci/l	.22 +/- .61	pci/l	0.0 +/- .30	pci/l	.61 +/- .54	pci/l	1.34	pci/l	0.0 +/- .71	pci/l			
5186	51-86-06-17-87	06/17/87	2	-5 +/- 0	pci/l	24 +/- 28	pci/l	0.0 +/- 0.06	pci/l	0.0 +/- 0.33	pci/l	0.12 +/- 0.37	pci/l	<1.0	pci/l	0.29 +/- 0.8	pci/l			
5186	51-86-06-17-87	06/17/87	2	-5 +/- 0	pci/l	24 +/- 28	pci/l	0.0 +/- 0.06	pci/l	0.0 +/- 0.33	pci/l	0.12 +/- 0.37	pci/l	<1.0	pci/l	0.29 +/- 0.8	pci/l			
5186	51-86-08-19-87	08/19/87	3	4 +/- 19	pci/l	6 +/- 44	pci/l	-0.4 +/- 1.1	pci/l	0.0 +/- 0.3	pci/l	0.0 +/- 0.5	pci/l	<1.0	pci/l	-1.6 +/- 6.0	pci/l			
5186	51-86-12-10-87	12/10/87	4	43 +/- 9	pci/l	42 +/- 10	pci/l	.10 +/- .10	pci/l	.02 +/- .04	pci/l	.07 +/- .08	pci/l	<1.0	pci/l	0.00 +/- .14	pci/l			
West Spray Field Alluvial Wells Downgradient																				
4986	G498611860	11/24/86		350 +/- 60	pci/l	1200 +/- 100	pci/l	12 +/- 2	pci/l	NR	12 +/- 2	pci/l	NR	0.02 +/- 0.14	pci/l	0.02 +/- 0.14	pci/l			
4986	49-86-04-08-87	04/08/87	1	20 +/- 10	pci/l	21 +/- 6	pci/l	0.0 +/- .91	pci/l	0.4 +/- 1.7	pci/l	0.7 +/- 3.6	pci/l	NR	0.0 +/- 2.2	pci/l	0.0 +/- 2.2	pci/l		
4986	49-86-06-18-87	06/18/87	2	71 +/- 15	pci/l	118 +/- 29	pci/l	3.5 +/- 0.9	pci/l	0.09 +/- 0.32	pci/l	4.0 +/- 0.9	pci/l	<1.0	pci/l	0.42 +/- 0.82	pci/l	.32 +/- .64	pci/l	
4986	49-86-08-24-87	08/24/87	3	6 +/- 16	pci/l	-9 +/- 34	pci/l	0.9 +/- 1.4	pci/l	0.6 +/- 0.7	pci/l	0.0 +/- 1.0	pci/l	1.5	pci/l	.32 +/- .64	pci/l	0.00 +/- .18	pci/l	
4986	49-86-12-14-87	12/14/87	4	620 +/- 110	pci/l	440 +/- 30	pci/l	.13 +/- .09	pci/l	.01 +/- .03	pci/l	.01 +/- .06	pci/l	<1.0	pci/l	0.00 +/- .18	pci/l	0.00 +/- .18	pci/l	
5086	G508610860	10/31/86		120 +/- 40	pci/l	100 +/- 20	pci/l	9.0 +/- 1.0	pci/l	NR	6.3 +/- 0.8	pci/l	NR	0.12 +/- 0.16	pci/l	0.12 +/- 0.16	pci/l			
5086	G508610862	10/31/86		190 +/- 50	pci/l	83 +/- 14	pci/l	7.9 +/- 1.0	pci/l	NR	5.2 +/- 0.9	pci/l	NR	0.02 +/- 0.13	pci/l	0.02 +/- 0.13	pci/l			
5086	50-86-05-11-87	05/11/87	1	54 +/- 15	pci/l	56 +/- 23	pci/l	2.5 +/- 1.2	pci/l	.03 +/- .43	pci/l	3.5 +/- 1.2	pci/l	2.62	pci/l	1.0 +/- 1.0	pci/l	1.0 +/- 1.0	pci/l	
5086	50-86-06-16-87	06/16/87	2	-4 +/- 0	pci/l	26 +/- 5	pci/l	0.08 +/- 0.65	pci/l	0.0 +/- 0.03	pci/l	0.2 +/- 0.44	pci/l	<1.0	pci/l	0.0 +/- 0.67	pci/l	.32 +/- .65	pci/l	
5086	50-86-08-14-87	08/14/87	3	6 +/- 15	pci/l	-8 +/- 42	pci/l	NR	NR	NR	NR	NR	3.5	pci/l	.32 +/- .65	pci/l	0.00 +/- .10	pci/l	0.00 +/- .10	pci/l
5086	50-86-12-10-87	12/10/87	4	30 +/- 8	pci/l	32 +/- 9	pci/l	.23 +/- .12	pci/l	.01 +/- .04	pci/l	.18 +/- .10	pci/l	<1.0	pci/l	-0.05 +/- .74	pci/l	-0.05 +/- .74	pci/l	
4786	G478611860	11/07/86		57 +/- 20	pci/l	50 +/- 12	pci/l	10 +/- 2	pci/l	NR	14 +/- 2	pci/l	NR	0.09 +/- 0.18	pci/l	0.09 +/- 0.18	pci/l			
4786	G478611862	11/07/86		61 +/- 22	pci/l	42 +/- 12	pci/l	6.0 +/- 1.1	pci/l	NR	7.7 +/- 1.2	pci/l	NR	0.05 +/- .38	pci/l	.08 +/- .71	pci/l	.08 +/- .71	pci/l	
4786	47-86-05-13-87	05/13/87	1	-8 +/- 6	pci/l	14 +/- 0	pci/l	0.0 +/- .53	pci/l	.005 +/- .31	pci/l	0.0 +/- .38	pci/l	<0.6	pci/l	0.0 +/- .7	pci/l	0.0 +/- .7	pci/l	
4786	47-86-06-22-87	06/22/87	2	-2 +/- 4	pci/l	-2 +/- 31	pci/l	0.0 +/- 0.59	pci/l	0.0 +/- 0.3	pci/l	0.36 +/- 0.48	pci/l	<1.0	pci/l	.11 +/- .78	pci/l	.11 +/- .78	pci/l	
4786	47-86-08-13-87	08/13/87	3	10 +/- 17	pci/l	6 +/- 41	pci/l	0.4 +/- 1.4	pci/l	4.0 +/- 1.4	pci/l	5.5 +/- 2.1	pci/l	<1.0	pci/l	NA	NA	NA	NA	
4786	47-86-10-05-87	10/05/87		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
4786	47-86-10-05-87	10/05/87	4	3 +/- 4	pci/l	7 +/- 9	pci/l	.15 +/- .09	pci/l	.04 +/- .04	pci/l	.18 +/- .08	pci/l	<1.0	pci/l	.11 +/- .14	pci/l	.11 +/- .14	pci/l	
4586	G458610860	10/16/86		200 +/- 80	pci/l	140 +/- 30	pci/l	11 +/- 1	pci/l	NR	10 +/- 1	pci/l	NR	0.13 +/- 0.21	pci/l	0.13 +/- 0.21	pci/l			
4586	G458610862	10/16/86		190 +/- 100	pci/l	250 +/- 40	pci/l	15 +/- 2	pci/l	NR	16 +/- 2	pci/l	NR	-0.02 +/- 0.08	pci/l	-0.02 +/- 0.08	pci/l			
4586	45-86-05-15-87	05/14/87	1	55 +/- 21	pci/l	23 +/- 15	pci/l	1.5 +/- 1.1	pci/l	.28 +/- .49	pci/l	1.0 +/- 0.9	pci/l	1.61	pci/l	4.7 +/- 1.8	pci/l	4.7 +/- 1.8	pci/l	
4586	45-86-06-12-87	06/12/87	2	0 +/- 0	pci/l	18 +/- 21	pci/l	0.0 +/- 0.59	pci/l	0.0 +/- 0.36	pci/l	0.0 +/- 0.35	pci/l	<1.0	pci/l	0.0 +/- 0.68	pci/l	0.0 +/- 0.68	pci/l	
4586	45-86-08-14-87	08/14/87	3	25 +/- 24	pci/l	27 +/- 41	pci/l	2.0 +/- 1.5	pci/l	0.2 +/- 0.6	pci/l	9.8 +/- 2.3	pci/l	2.1	pci/l	.10 +/- .86	pci/l	.10 +/- .86	pci/l	
4586	45-86-09-30-87	09/30/87		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
4586	45-86-10-01-87	10/01/87		NR	NR	0.099 +/- 0.174	pci/l	NR	NR	0.085 +/- 0.053	pci/l	0.02 +/- 0.06	pci/l	<1.0	pci/l	0.106 +/- 0.062	pci/l	0.106 +/- 0.062	pci/l	
4586	45-86-10-01-87	10/01/87	4	21 +/- 5	pci/l	26 +/- 10	pci/l	0.00 +/- 0.06	pci/l	0.00 +/- 0.03	pci/l	0.02 +/- 0.06	pci/l	<1.0	pci/l	0.00 +/- 0.09	pci/l	0.00 +/- 0.09	pci/l	

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

**Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Americium 241	Cesium 137	Tritium
West Spray Field Alluvial Wells Upgradient						
1081	G108108860	08/08/86		0.03 +/- .04 pci/l	NR	0.33 +/- 0.23 pci/l
1081	10-81-05-11-87	05/11/87	1	0.0 +/- 1.2 pci/l	NR	110 pci/l
1081	10-81-06-18-87	06/18/87	2	0.0 +/- 1.2 pci/l	NR	<110 pci/l
1081	10-81-08-20-87	08/20/87	3	.04 +/- .56 pci/l	NR	<526 pci/l
1081	10-81-01-12-88	01/12/88	4	0.00 +/- .47 pci/l	NR	<220 pci/l
5186	G518611860	11/07/86		-0.03 +/- .08 pci/l	NR	0.37 +/- 0.20 pci/l
5186	51-86-05-13-87	05/13/87	1	0.0 +/- 1.2 pci/l	NR	150 pci/l
5186	51-86-06-17-87	06/17/87	2	0.0 +/- 1.3 pci/l	NR	<110 pci/l
5186	51-86-06-17-87	06/17/87	2	0.0 +/- 1.3 pci/l	NR	<110 pci/l
5186	51-86-08-19-87	08/19/87	3	.04 +/- .47 pci/l	NR	<492 pci/l
5186	51-86-12-10-87	12/10/87	4	0.00 +/- .19 pci/l	NR	<220 pci/l
West Spray Field Alluvial Wells Downgradient						
4986	G498611860	11/24/86		0.04 +/- .10 pci/l	NR	0.03 +/- 0.24 pci/l
4986	49-86-04-08-87	04/08/87	1	0.0 +/- 4.4 pci/l	NR	<110 pci/l
4986	49-86-06-18-87	06/18/87	2	0.0 +/- 1.3 pci/l	NR	<110 pci/l
4986	49-86-08-24-87	08/24/87	3	.03 +/- .45 pci/l	NR	2218 +/- 397 pci/l
4986	49-86-12-14-87	12/14/87	4	NR	NR	<220 pci/l
5086	G508610860	10/31/86		-0.01 +/- .08 pci/l	NR	0.30 +/- 0.22 pci/l
5086	G508610862	10/31/86		0.03 +/- .09 pci/l	NR	0.15 +/- 0.22 pci/l
5086	50-86-05-11-87	05/11/87	1	0.0 +/- 2.0 pci/l	NR	160 pc/l
5086	50-86-06-16-87	06/16/87	2	0.0 +/- 1.2 pci/l	NR	<110 pci/l
5086	50-86-08-14-87	08/14/87	3	-.04 +/- .43 pci/l	NR	487 +/- 291 pci/l
5086	50-86-12-10-87	12/10/87	4	0.00 +/- .19 pci/l	NR	<220 pci/l
4786	G478611860	11/07/86		-0.01 +/- .08 pci/l	NR	-0.09 +/- 0.18 pci/l
4786	G478611862	11/07/86		-0.02 +/- .08 pci/l	NR	-0.08 +/- 0.19 pci/l
4786	47-86-05-13-87	05/13/87	1	0.0 +/- 1.5 pc/l	NR	<110 pc/l
4786	47-86-06-22-87	06/22/87	2	0.0 +/- 1.2 pci/l	NR	<110 pci/l
4786	47-86-08-13-87	08/13/87	3	-.04 +/- .82 pci/l	NR	<526 pci/l
4786	47-86-10-05-87	10/05/87		NA	NA	NA
4786	47-86-10-05-87	10/05/87	4	0.00 +/- .05 pci/l	NR	<460 pci/l
4586	G458610860	10/16/86		0.03 +/- .07 pci/l	NR	0.10 +/- 0.22 pci/l
4586	G458610862	10/16/86		-0.01 +/- .03 pci/l	NR	0.13 +/- 0.22 pci/l
4586	45-86-05-15-87	05/14/87	1	0.0 +/- 1.4 pc/l	NR	110 pc/l
4586	45-86-06-12-87	06/12/87	2	0.0 +/- 1.5 pci/l	NR	330 pci/l
4586	45-86-08-14-87	08/14/87	3	.69 +/- .91 pci/l	NR	<535 pci/l
4586	45-86-09-30-87	09/30/87		NA	NA	NA
4586	45-86-10-01-87	10/01/87		-0.019 +/- 0.036 pci/l	NR	NR
4586	45-86-10-01-87	10/01/87	4	0.00 +/- .44 pci/l	NR	<460 pci/l

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

ATTACHMENT B

ALTERNATE GROUND-WATER MONITORING PROGRAM RESULTS

PRESENT LANDFILL

Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloro methane	Bromo methane	Vinyl Chloride	Chloro ethane	Methylene Chloride	Acetone	Carbon Disulfide	1,1-Dichloro ethene	1,1-Dichloro ethane	Trans-1,2-Dichloro ethene
Landfill Alluvial Wells Upgradient														
4586	G458610860	10/16/86		ug/l	10 U	10 U	10 U	10 U	5 U	15 8	5 U	5 U	5 U	5 U
4586	G458610862	10/16/86		ug/l	10 U	10 U	10 U	10 U	5 U	3 8J	5 U	5 U	5 U	5 U
4586	45-86-05-15-87	05/14/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
4586	45-86-06-12-87	06/12/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
4586	45-86-08-14-87	08/14/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
4586	45-86-09-30-87	09/30/87		ug/l	10 U	10 U	10 U	10 U	5 U	1 J8	5 U	5 U	5 U	5 U
4586	45-86-10-01-87	10/01/87			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
1086	G108610860	10/16/86		ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
1086	10-86-05-14-87	05/14/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1086	10-86-06-15-87	06/15/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1086	10-86-08-10-87	08/10/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
1086	10-86-12-15-87	12/15/87	4	ug/l	10 U	10 U	10 U	10 U	9	10 U	5 U	5 U	5 U	5 U
Landfill Alluvial Wells Downgradient														
5887	58-87-11-18-87	11/18/87	4	ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
5987	59-88-10-08-87	10/08/87			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6487	Not Sampled													
6687	Not Sampled													
6887	Not Sampled													
6187	Not Sampled													
6287	Not Sampled													
6387	Not Sampled													
6787	Not Sampled													
7187	Not Sampled													
0786	DRY	09/29/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0786	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4087	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4287	GM4287	06/24/87	2	ug/l	10 U	10 U	10 U	10 U	5 U	26 8	5 U	5 U	5 U	5 U
4287	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NR = Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA = Insufficient water in well for analysis

J : Present below detection limit

Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloroform	1,2-Dichloro ethane	2-Butanone	1,1,1-Trichloro ethane	Carbon Tetra chloride	Vinyl Acetate	Bromo dichloro methane	1,2-Dichloro propane	Trans-1,3-Dichloro propene	Trichloro ethane
Landfill Alluvial Wells Upgradient														
4586	6458610860	10/16/86		ug/l	S U	S U	10 U	S U	S U	10 U	S U	S U	S U	S U
4586	6458610862	10/16/86		ug/l	S U	S U	6 J	S U	S U	10 U	S U	S U	S U	S U
4586	45-86-05-15-87	05/14/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4586	45-86-06-12-87	06/12/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
4586	45-86-08-14-87	08/14/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
4586	45-86-09-30-87	09/30/87		ug/l	S U	S U	10 U	S U	S U	10 U	S U	S U	S U	S U
4586	45-86-10-01-87	10/01/87			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	ug/l	S U	S U	NR	S U	S U	NR	NR	NR	NR	S U
1086	6108610860	10/16/86		ug/l	S U	S U	10 U	S U	S U	10 U	S U	S U	S U	S U
1086	10-86-05-14-87	05/14/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1086	10-86-06-15-87	06/15/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1086	10-86-08-10-87	08/10/87	3	ug/l	S U	S U	NR	S U	S U	NR	NR	NR	NR	S U
1086	10-86-12-15-87	12/15/87	4	ug/l	S U	S U	10 U	S U	S U	10 U	S U	S U	S U	S U
Landfill Alluvial Wells Downgradient														
5887	58-87-11-18-87	11/18/87	4	ug/l	S U	S U	10 U	S U	S U	10 U	S U	S U	S U	S U
5987	59-86-10-08-87	10/08/87			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6487	Not Sampled													
6687	Not Sampled													
6087	Not Sampled													
6187	Not Sampled													
6287	Not Sampled													
6387	Not Sampled													
6787	Not Sampled													
7187	Not Sampled													
0786	DRY	09/29/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0786	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4087	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4287	GW4287	06/24/87	2	ug/l	S U	S U	2.0 J	S U	S U	10 U	S U	S U	S U	S U
4287	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Dibromo chloro methane	1,1,2-Trichloro ethane	Benzene	cis-1,3-Dichloro propene	2-Chloro ethylvinyl ether	Bromoform	4-Methyl-2-pentanone	2-Hexanone	Tetrachloro ethene	1,1,2,2-Tetrachloro ethane
Landfill Alluvial Wells Upgradient														
4586	G458610860	10/16/86		ug/l	S U	S U	S U	S U	10 U	S U	10 U	10 U	S U	S U
4586	G458610862	10/16/86		ug/l	S U	S U	S U	S U	10 U	S U	10 U	10 U	S U	S U
4586	45-86-05-15-87	05/14/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
4586	45-86-06-12-87	06/12/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
4586	45-86-08-14-87	08/14/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
4586	45-86-09-30-87	09/30/87		ug/l	S U	S U	S U	S U	10 U	S U	10 U	10 U	S U	S U
4586	45-86-10-01-87	10/01/87		ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	ug/l	NR	S U	NR	NR	NR	NR	NR	NR	S U	NR
1086	G108610860	10/16/86		ug/l	S U	S U	S U	S U	10 U	S U	10 U	10 U	S U	S U
1086	10-86-05-14-87	05/14/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1086	10-86-06-15-87	06/15/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1086	10-86-08-10-87	08/10/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	S U	NR
1086	10-86-12-15-87	12/15/87	4	ug/l	S U	S U	S U	S U	NR	S U	10 U	10 U	S U	S U
Landfill Alluvial Wells Downgradient														
5887	58-87-11-18-87	11/18/87	4	ug/l	S U	S U	S U	S U	NR	S U	10 U	10 U	S U	S U
5987	59-86-10-08-87	10/08/87			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6487	Not Sampled													
6687	Not Sampled													
6887	Not Sampled													
6187	Not Sampled													
6287	Not Sampled													
6387	Not Sampled													
6787	Not Sampled													
7187	Not Sampled													
0786	DRY	09/29/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0786	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4087	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4287	GM4287	06/24/87	2	ug/l	S U	S U	S U	S U	10 U	S U	10 U	10 U	S U	S U
4287	DRY	08/10/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Toluene	Chloro benzene	[Ethyl] benzene	Styrene	Total xylenes
Landfill Alluvial Wells Upgradient									
4586	64586-10860	10/16/86		ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l	1 J
4586	64586-10862	10/16/86		ug/l	5 ug/l	NR	NR	5 ug/l	2 J
4586	45-86-05-15-87	05/14/87	1	ug/l	NR	NR	NR	NR	NR
4586	45-86-06-12-87	06/12/87	2	ug/l	NR	NR	NR	NR	NR
4586	45-86-08-14-87	08/14/87	3	ug/l	NR	NR	NR	NR	NR
4586	45-86-09-30-87	09/30/87		ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l
4586	45-86-10-01-87	10/01/87		ug/l	NR	NR	NR	NR	NR
4586	45-86-10-01-87	10/01/87	4	ug/l	NR	NR	NR	NR	NR
1086	64586-10860	10/16/86		ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l
1086	10-86-05-14-87	05/14/87	1	ug/l	NR	NR	NR	NR	NR
1086	10-86-06-15-87	06/15/87	2	ug/l	NR	NR	NR	NR	NR
1086	10-86-08-10-87	08/10/87	3	ug/l	NR	NR	NR	NR	NR
1086	10-86-12-15-87	12/15/87	4	ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l
Landfill Alluvial Wells Downgradient									
5987	58-87-11-18-87	11/18/87	4	ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l	5 ug/l
5987	59-86-10-08-87	10/08/87			NR	NR	NR	NR	NR
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
6487	Not Sampled								
7187	Not Sampled								
0786	0786	09/29/86							
0786	CRT	08/10/87	3						
4487	CRT	08/10/87	3						
4287	CMT-2B	06/24/87	2	ug/l	NR	NR	NR	NR	NR
4287	DRY	08/10/87	3		NR	NR	NR	NR	NR

Notes:
NR : Analyte not reported
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U : Analyzed but not detected
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S : Present in laboratory blank

Groundwater Metals Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Lead (Pb), total	Antimony (Sb), total	Selenium (Se), total	Strontium (Sr), total	Thallium (Tl), total	Vanadium (V), total	Zinc (Zn), total
Landfill Alluvial Wells Upgradient											
4586	G458610860	10/16/86		mg/l	0.005 U	0.050 U	0.002 U	0.190	0.010 U	0.025 U	0.006
4586	G458610862	10/16/86		mg/l	0.005 U	0.050 U	0.002 U	0.193	0.010 U	0.025 U	0.005 U
4586	45-86-05-15-87	05/14/87	1	mg/l	0.0050 U	0.06 U	0.005 U	0.0633	0.0100 U	0.0240 U	0.02 U
4586	45-86-06-12-87	06/12/87	2	mg/l	0.011	0.06 U	0.005 U	0.0550	0.01 U	0.0240 U	0.0200 U
4586	45-86-08-14-87	08/14/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.0617	0.01 U	0.0240 U	0.0498
4586	45-86-09-30-87	09/30/87		NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87		NA	NA	NA	NA	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	mg/l	0.002 J	0.011 J	0.005 U	0.0847	0.01 U	0.0334	0.0200 U
1086	G108610860	10/16/86		mg/l	0.005 U	0.050 U	0.002 U	0.238	0.010 U	0.057	0.055
1086	10-86-05-14-87	05/14/87	1	mg/l	0.005 U	0.0600 U	0.0050 U	0.1292	0.01 U	0.0240 U	0.02 U
1086	10-86-06-15-87	06/15/87	2	mg/l	0.009	0.06 U	0.005 U	0.1014	0.01 U	0.0240 U	0.0295
1086	10-86-08-10-87	08/10/87	3	mg/l	0.005 U	0.02 U	0.005 U	0.1145	0.01 U	0.0240 U	0.0581
1086	10-86-12-15-87	12/15/87	4	mg/l	NR	NR	NR	0.0975	NR	0.0240 U	0.0200 U
Landfill Alluvial Wells Downgradient											
5887	58-87-11-18-87	11/18/87	4	NA	NA	NA	NA	NA	NA	NA	NA
5987	59-86-10-08-87	10/08/87		NA	NA	NA	NA	NA	NA	NA	NA
6487	Not Sampled										
6687	Not Sampled										
6087	Not Sampled										
6187	Not Sampled										
6287	Not Sampled										
6387	Not Sampled										
6787	Not Sampled										
7187	Not Sampled										
0786	DRY	09/29/86		NA	NA	NA	NA	NA	NA	NA	NA
0786	DRY	08/10/87	3	NA	NA	NA	NA	NA	NA	NA	NA
4087	DRY	08/10/87	3	NA	NA	NA	NA	NA	NA	NA	NA
4287	GM4287	06/24/87	2	NA	NA	NA	NA	NA	NA	NA	NA
4287	DRY	08/10/87	3	— NA	NA	NA	NA	NA	NA	NA	NA

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis

U = Analyzed but not detected

J = Present below detection limit

B : Present in laboratory blank

**Groundwater Inorganic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Chloride	Cyanide, Total	Fluoride	Nitrate-Nitrite-Nitrogen	Sulfate	Total Dissolved Solids	HCO ₃ -
Landfill Alluvial Wells Upgradient										
4586	G458610860	10/16/86		6.1 mg/l	0.01 U mg/l	NR	NR	14 mg/l	180 mg/l	NR
4586	G458610862	10/16/86		5.9 mg/l	0.01 U mg/l	NR	NR	13 mg/l	160 mg/l	NR
4586	45-86-05-15-87	05/14/87	1	4.90 mg/l	1.0 U mg/l	NR	0.56 mg/l	24.5 mg/l	143 mg/l	22.0 mg/l
4586	45-86-06-12-87	06/12/87	2	9.30 mg/l	1.0 U mg/l	NR	0.51 mg/l	19.0 mg/l	92.0 mg/l	18.4 mg/l
4586	45-86-08-14-87	08/14/87	3	6.39 mg/l	1 U mg/l	NR	0.75 mg/l	14.5 mg/l	124 mg/l	39.1 mg/l
4586	45-86-09-30-87	09/30/87		NA	NA	NR	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87		NA	NA	NR	NA	NA	NA	NA
4586	45-86-10-01-87	10/01/87	4	6.5 mg/l	NR	NR	1.02 mg/l	17.5 mg/l	125 mg/l	45.1 mg/l
1086	G108610860	10/16/86		4.3 mg/l	0.01 U mg/l	NR	NR	17 mg/l	140 mg/l	NR
1086	10-86-05-14-87	05/14/87	1	6.30 mg/l	1.0 U mg/l	NR	3.40 mg/l	42.0 mg/l	145 mg/l	30.0 mg/l
1086	10-86-06-15-87	06/15/87	2	4.91 mg/l	1.0 U mg/l	NR	4.50 mg/l	40.0 mg/l	161 mg/l	27.5 mg/l
1086	10-86-08-10-87	08/10/87	3	72.0 mg/l	1 U mg/l	NR	4.95 mg/l	36.0 mg/l	125 mg/l	30.2 mg/l
1086	10-86-12-15-87	12/15/87	4	2.91 mg/l	NR	NR	3.04 mg/l	49.0 mg/l	134 mg/l	47.1 mg/l
Landfill Alluvial Wells Downgradient										
5887	58-87-11-18-87	11/18/87	4	NA	NA	NA	NA	NA	NA	NA
5987	59-86-10-08-87	10/08/87		NA	NA	NA	NA	NA	NA	NA
6487	Not Sampled									
6687	Not Sampled									
6087	Not Sampled									
6187	Not Sampled									
6287	Not Sampled									
6387	Not Sampled									
6787	Not Sampled									
7187	Not Sampled									
0786	DRY	09/29/86		NA	NA	NA	NA	NA	NA	NA
0786	DRY	08/10/87	3	NA	NA	NA	NA	NA	NA	NA
4087	DRY	08/10/87	3	NA	NA	NA	NA	NA	NA	NA
4287	GM4287	06/24/87	2	NA	NA	NA	NA	NA	NA	NA
4287	DRY	08/10/87	3	NA	NA	NA	NA	NA	NA	NA

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

Groundwater hydrographic results

Groundwater Hydrogeologic Results

Sample Number: 017-003-0001
Date: 01/01/2016
Faint Hexagonal
Shape/Size: 0.1g
Color: Brown
Chromium (Cr+6)

Landscape Alluvial Meets Upgradient

Landschaftsalluvial meets Longgradiant

b = Present in laboratory detection
c = Present below detection limit

Groundwater Radiochemistry Results

For more information about the new regulations, contact your local county planning or zoning office.

Plutonium 239, 240

Strontium 89, 90

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233, 234

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Sample Number

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Landfill Alluvial wells Downgradient

5987	58-88-11-88-87	11/18/87	10/08/87	4	NR	-0.006 +/- 0.043 pCi/l						
6087	Not Sampled											
6187	Not Sampled											
6287	Not Sampled											
6387	Not Sampled											
6487	Not Sampled											
6587	Not Sampled											
6687	Not Sampled											
6787	Not Sampled											
6887	Not Sampled											
6987	Not Sampled											
7087	Not Sampled											
7187	Not Sampled											
7287	Not Sampled											
7387	Not Sampled											
7487	Not Sampled											
7587	Not Sampled											
7687	Not Sampled											
7787	Not Sampled											
7887	Not Sampled											
7987	Not Sampled											
8087	Not Sampled											
8187	Not Sampled											
8287	Not Sampled											
8387	Not Sampled											
8487	Not Sampled											
8587	Not Sampled											
8687	Not Sampled											
8787	Not Sampled											
8887	Not Sampled											
8987	Not Sampled											
9087	09/29/86											
9187	09/10/87	3										
9287	08/10/87	3										
9387	06/24/87	2										
9487	06/24/87	2										
9587	08/10/87	3										
9687	08/10/87	3										
9787	08/10/87	3										
9887	08/10/87	3										
9987	08/10/87	3										
10087	08/10/87	3										
10187	08/10/87	3										
10287	08/10/87	3										
10387	08/10/87	3										
10487	08/10/87	3										
10587	08/10/87	3										
10687	08/10/87	3										
10787	08/10/87	3										
10887	08/10/87	3										
10987	08/10/87	3										
11087	08/10/87	3										
11187	08/10/87	3										
11287	08/10/87	3										
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12887	08/10/87	3										
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14787	08/10/87	3										
14887	08/10/87	3										
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15387	08/10/87	3										
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16587	08/10/87	3										
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16887	08/10/87	3										
16987	08/10/87	3										
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17187	08/10/87	3										
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17387	08/10/87	3										
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17787	08/10/87	3										
17887	08/10/87	3										
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18687	08/10/87	3										
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19187	08/10/87	3										
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19387	08/10/87	3										
19487	08/10/87	3										
19587	08/10/87	3										
19687	08/10/87	3										
19787	08/10/87	3										
19887	08/10/87	3										
19987	08/10/87	3										
20087	08/10/87	3										
20187	08/10/87	3										
20287	08/10/87	3										
20387	08/10/87	3										
20487	08/10/87	3										
20587	08/10/87	3										
20687	08/10/87	3										
20787	08/10/87	3										
20887	08/10/87	3										
20987	08/10/87	3										
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21687	08/10/87	3										
21787	08/10/87	3										
21887	08/10/87	3										
21987	08/10/87	3										
22087	08/10/87	3										
22187	08/10/87	3										
22287	08/10/87	3										
22387	08/10/87	3										
22487	08/10/87	3										
22587	08/10/87	3										
22687	08/10/87	3			</							

4287	DRY	08/10/87	3
4287	GM4287	06/24/87	2
4087	DRY	08/10/87	3
0798	DRY	08/10/87	3
			3

NA : Insufficient material in well for analysis

Groundwater Radiochemistry Results

for Regulated Units at Rocky Flats Plant

Groundwater Radiochemistry Results

Notes: HR : Analyte not reported

Land 4287
4288
4087
0786
0786
7187
6781
6387
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6087
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5987
5887

ATTACHMENT C

ASSESSMENT GROUND-WATER MONITORING PROGRAM RESULTS

SOLAR EVAPORATION PONDS

Groundwater Sample Information

for Regulated Units at Rocky Flats Plant

LABORATORY BATTIC HUMERES

Solar Pond Bedrock Wells Upgrade

Groundwater Sample Information

For Regulated Units at Rocky Flats Plant

MELI	NUMBER	NUMBER	DATE	TYPE	LABORATORY BATCH NUMBERS						
					FILLED PROGRAMS	CONDUT IEMP	SPEC. CODE	VOLATILE	METALS	ORGANICS	RADIOACTIVITY
SAMPLE INFORMATION											
1486	14-86-06-10-87	06/10/87	08/05/87	Routine	6.20	1628	13.5	2000	0287-881-039	0287-881-042	0287-881-039
1486	14-86-06-10-87	06/10/87	08/05/87	Routine	7.30	196	15.4	234	0387-881-068	0387-881-074	0387-881-073
1486	14-86-12-08-87	08/05/87	12/08/87	Routine	7.40	1824	9.3	2397	0487-881-051	0487-881-058	0487-881-037
SOLAR POND BEDROCK MELLS DOWNGRADIENT											
					pH	(gamma/g)	(deg C)	(um/g/g)	ORGANICS	METALS	RADIONACTIVITY

FRAUDAWARER VOLATILE OFFGAS IN RESULTS

of Regulated Utilities at Rocky Flats Plant

Notes: NM = negligible not reported; U = analyzed but not detected; S = present below detection limit; NA = insufficient material in well for analysis

NA : INSURANCE MATER IN MEL FOR ANDIYSIS

NOTES: NR = ANALYSE NOT REPORTED

Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Utr.	Units	Chloroform	1,2-Dichloro ethane	2-Butanone	1,1,1-Trichloro ethane	Carbon tetrachloride	Vinyl Acetate	Bromo dichloro methane	1,2-Dichloro propane	Trans-1,3-Dichloro propene	Trichloro ethene
Solar Pond Alluvial Wells Upgradient														
2486	DRY	09/01/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2486	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2286	G228609860	09/09/86		ug/l	147	5 U	4 BJ	5 U	350	10 U	5 U	5 U	5 U	410
2286	G228609862	09/09/86			NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
2286	22-86-03-24-87	03/24/87	1	ug/l	100	4 U	NR	1400	4 U	NR	NR	NR	NR	650
2286	22-86-06-24-87	06/24/87	2	ug/l	36	8000	NR	4 U	3000	NR	NR	NR	NR	6000
2286	22-86-08-27-87	08/27/87	3	ug/l	80	5 U	NR	5 U	491	NR	NR	NR	NR	490
2286	22-86-12-18-87	12/18/87	4	ug/l	38	5 U	10 U	5 U	161	10 U	5 U	5 U	5 U	186
5687	Not Sampled													

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Dibromo chloro methane	1,1,2-Trichloro ethane	Benzene	cis-1,3-Dichloro propene	2-Chloro ethylvinyl ether	Bromoform	4-Methyl-2-pentanone	2-Hexanone	Tetrachloro ethene	1,1,2,2-Tetrachloro ethane
Solar Pond Alluvial Wells Upgradient														
2486	DRY	09/01/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2486	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2286	G228609860	09/09/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	2 J	5 U
2286	G228609862	09/09/86			NF	NF	NF	NF	NF	NF	NF	NF	NF	NF
2286	22-86-03-24-87	03/24/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2286	22-86-06-24-87	06/24/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	8	NR
2286	22-86-08-27-87	08/27/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
2286	22-86-12-18-87	12/18/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
5687	Not Sampled													

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Toluene	Chloro benzene	Ethyl benzene	Styrene	Total Xylenes
Solar Pond Alluvial Wells Upgradient									
2486	DRY	09/01/86			NA	NA	NA	NA	NA
2486	DRY	09/24/87	J		NA	NA	NA	NA	NA
2286	G228609860	09/09/86		ug/l	5 U	5 U	5 U	5 U	5 U
2286	G228609862	09/09/86			NF	NF	NF	NF	NF
2286	22-86-03-24-87	03/24/87	1	ug/l	NR	NR	NR	NR	NR
2286	22-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR
2286	22-86-08-27-87	08/27/87	3	ug/l	NR	NR	NR	NR	NR
2286	22-86-12-18-87	12/18/87	4	ug/l	5 U	5 U	5 U	5 U	5 U
5687	Not Sampled								

Notes: NR : Analyte not reported

NA : (Insufficient water in well) for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Volatile Organic Results

for Regulated Units at Rocky Flats Plant

Solar Pond Alluvial Heij's Dangradijent

NA : Insufficient material in well for analysis

2025 RELEASE UNDER E.O. 14176

: Present below detection limit

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Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloroform	1,2-Dichloro ethane	2-Butanone	1,1,1-Trichloro ethane	Carbon Tetra chloride	Vinyl Acetate	Bromo dichloro methane	1,2-Dichloro propane	Trans-1,3-Dichloro propene	Trichloro ethene
Solar Pond Alluvial Wells Downgradient														
2086	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2086	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2086	G208609860	09/18/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
2086	26-86-03-19-87	03/19/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
2086	26-86-06-24-87	06/24/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4
2086	26-86-09-08-87	09/08/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
2086	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2086	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3787	Not Sampled													
3887	Not Sampled													
2686	G268609860	09/18/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	6
2686	26-86-03-18-87	03/18/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	8
2686	26-86-08-27-87	08/27/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
1886	DRY	09/03/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1886	DRY	08/05/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1786	G178609860	09/25/86		ug/l	5 U	5 U	5 BJ	5 U	5 U	10 U	5 U	5 U	5 U	2 J
1786	G178609862	09/25/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	3 J
1786	17-86-04-22-87	04/22/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1786	17-86-06-10-87	06/10/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1786	17-86-08-05-87	08/05/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
1786	17-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1586	G158609860	09/09/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1586	G158609862	09/09/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1586	15-86-04-22-87	04/22/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1586	15-86-06-10-87	06/10/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1586	15-86-08-05-87	08/05/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
1586	15-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1386	DRY	09/03/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1386	13-86-04-23-87	04/23/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1386	13-86-06-11-87	06/11/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1386	13-86-08-04-87	08/04/87	3	ug/l	125	5 U	NR	5 U	5 U	NR	NR	NR	NR	5

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis

U = Analyzed but not detected

J = Present below detection limit

B = Present in laboratory blank

Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Dibromo chloro methane	1,1,2-Trichloro ethane	Benzene	cis-1,3-Dichloro propene	2-Chloro ethylvinyl ether	Bromoform	4-Methyl-2-pentanone	2-Hexanone	Tetrachloro ethene	1,1,2,2-Tetrachloro ethane
Solar Pond Alluvial Wells Downgradient														
2086	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2086	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2886	G288609860	09/18/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
2886	28-86-03-19-87	03/19/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2886	28-86-06-24-87	06/24/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2886	28-86-09-08-87	09/08/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
2986	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2986	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3787	Not Sampled													
3887	Not Sampled													
2686	G268609860	09/18/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
2686	26-86-03-18-87	03/18/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2686	26-86-08-27-87	08/27/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
1886	DRY	09/03/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1886	DRY	08/05/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1786	G178609860	09/25/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1786	G178609862	09/25/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1786	17-86-04-22-87	04/22/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1786	17-86-06-10-87	06/10/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1786	17-86-08-05-87	08/05/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
1786	17-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
1586	G158609860	09/09/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1586	G158609862	09/09/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1586	15-86-04-22-87	04/22/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1586	15-86-06-10-87	06/10/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1586	15-86-08-05-87	08/05/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
1586	15-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
1386	DRY	09/03/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1386	13-86-04-23-87	04/23/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1386	13-86-06-11-87	06/11/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1386	13-86-08-04-87	08/04/87	3	ug/l	NR	6	NR	NR	NR	NR	NR	NR	5 U	NR

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Toluene	Chloro benzene	Ethy benzene	Styrene	Total Xylenes
Solar Pond Alluvial Wells Downgradient									
2086	DRY	09/12/86			NA	NA	NA	NA	NA
2086	DRY	09/24/87	3		NA	NA	NA	NA	NA
2886	G288609860	09/18/86		ug/l	5 U	5 U	5 U	5 U	5 U
2886	28-86-03-19-87	03/19/87	1	ug/l	NR	NR	NR	NR	NR
2886	28-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR
2886	28-86-09-08-87	09/08/87	3	ug/l	NR	NR	NR	NR	NR
2986	DRY	09/12/86			NA	NA	NA	NA	NA
2986	DRY	09/24/87	3		NA	NA	NA	NA	NA
3787	Not Sampled								
3887	Not Sampled								
2686	G268609860	09/18/86		ug/l	5 U	5 U	5 U	5 U	5 U
2686	26-86-03-18-87	03/18/87	1	ug/l	NR	NR	NR	NR	NR
2686	26-86-08-27-87	08/27/87	3	ug/l	NR	NR	NR	NR	NR
1886	DRY	09/03/86			NA	NA	NA	NA	NA
1886	DRY	08/05/87	3		NA	NA	NA	NA	NA
1786	G178609860	09/25/86		ug/l	5 U	5 U	5 U	5 U	5 U
1786	G178609862	09/25/86		ug/l	5 U	5 U	5 U	5 U	5 U
1786	17-86-04-22-87	04/22/87	1	ug/l	NR	NR	NR	NR	NR
1786	17-86-06-10-87	06/10/87	2	ug/l	NR	NR	NR	NR	NR
1786	17-86-08-05-87	08/05/87	3	ug/l	NR	NR	NR	NR	NR
1786	17-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	5 U	5 U	5 U
1586	G158609860	09/09/86		ug/l	5 U	5 U	5 U	5 U	5 U
1586	G158609862	09/09/86		ug/l	5 U	5 U	5 U	5 U	5 U
1586	15-86-04-22-87	04/22/87	1	ug/l	NR	NR	NR	NR	NR
1586	15-86-06-10-87	06/10/87	2	ug/l	NR	NR	NR	NR	NR
1586	15-86-08-05-87	08/05/87	3	ug/l	NR	NR	NR	NR	NR
1586	15-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	5 U	5 U	5 U
1386	DRY	09/03/86			NA	NA	NA	NA	NA
1386	13-86-04-23-87	04/23/87	1	ug/l	NR	NR	NR	NR	NR
1386	13-86-06-11-87	06/11/87	2	ug/l	NR	NR	NR	NR	NR
1386	13-86-08-04-87	08/04/87	3	ug/l	NR	NR	NR	NR	NR

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Metals Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Silver (Ag), total	Aluminum (Al), total	Arsenic (As), total	Barium (Ba), total	Beryllium (Be), total	Calcium (Ca), total	Cadmium (Cd), total	Colbalt (Co), total	Chromium (Cr), total	Cesium (Cs), total
Solar Pond Alluvial Wells Upgradient														
2486	DRY	09/01/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2486	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2286	G228609860	09/09/86		mg/l	0.010 U	0.100 U	0.002 U	0.100 U	0.005 U	57.0	0.005 U	0.050 U	0.010 U	0.150 U
2286	G228609862	09/09/86		mg/l	0.010 U	0.100 U	0.002 U	0.100 U	0.005 U	71.3	0.005 U	0.050 U	0.010 U	0.150 U
2286	22-86-03-24-87	03/24/87	1	mg/l	0.0076 U	0.1388	0.01 U	0.0419	0.005 U	41.9695	0.005 U	0.0220 U	0.0100 U	0.2 U
2286	22-86-06-24-87	06/24/87	2	mg/l	0.0076 U	0.0330	0.01 U	0.1908	0.005 U	53.8322	0.005 U	0.0220 U	0.0100 U	0.2 U
2286	22-86-08-27-87	08/27/87	3	mg/l	0.0076 U	0.4234	0.005 U	0.2045	0.005 U	50.3961	0.0003 J	0.0220 U	0.0100 U	0.02 U
2286	22-86-12-18-87	12/18/87	4	mg/l	0.0076 U	0.0409	0.007	0.1368	0.005 U	64.7845	0.001 U	0.0220 U	0.0127	NR
5687	Not Sampled													

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Metals Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Copper (Cu), total	Iron (Fe), total	Mercury (Hg), total	Potassium (K), total	Lithium (Li), total	Magnesium (Mg), total	Manganese (Mn), total	Molybdenum (Mo), total	Sodium (Na), total	Nickel (Ni), total
Solar Pond Alluvial Wells Upgradient														
2486	DRY	09/01/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2486	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2286	6228609860	09/09/86		mg/l	0.020 U	0.075 U	0.00067	4.040	NR	9.180	0.015	0.100 U	99.7	0.040 U
2286	6228609862	09/09/86		mg/l	0.020 U	0.075 U	0.0024	4.480	NR	11.4	0.016	0.100 U	90.7	4.040
2286	22-86-03-24-87	03/24/87	1	mg/l	0.0066	0.0682	0.0002 U	6.0	NR	6.5882	0.1034	0.0220 U	185.2432	0.1097
2286	22-86-06-24-87	06/24/87	2	mg/l	0.0063 U	0.0153	0.0002 U	8.2	NR	7.1633	0.0747	0.0220 U	145.6882	0.1054
2286	22-86-08-27-87	08/27/87	3	mg/l	0.0099	0.2887	0.0002 U	10.6	NR	9.7533	0.2297	0.0220 U	129.0079	0.0938
2286	22-86-12-18-87	12/18/87	4	mg/l	0.0063 U	0.1833	0.002 U	NR	NR	10.2115	0.2621	0.0220 U	79.2068	0.1973
5687	Not Sampled													

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Metals Results

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WELL	FIELD	DATE	UNITS	(Ag), total	Aluminum	Arsenic	Barium	Beryllium	(Ba), total	Calcium	Cadmium	Chromium	Cesium	Cobalt	(Cr), total	(Cs), total	(Cd), total	(Ca), total	(As), total	(Al), total	Sampled	Dr.	Sample Number	Date	Field	WELL
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U : Analyzed but not detected
J : Present below detection limit

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Groundwater Metals Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Copper (Cu), total	Iron (Fe), total	Mercury (Hg), total	Potassium (K), total	Lithium (Li), total	Magnesium (Mg), total	Manganese (Mn), total	Molybdenum (Mo), total	Sodium (Na), total	Nickel (Ni), total
Solar Pond Alluvial Wells Downgradient														
2086	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2086	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2086	G288609860	09/18/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2886	28-86-03-19-87	03/19/87	1	mg/l	0.0063 U	0.0147	0.0002 U	260.0	NR	84.9911	0.7376	0.0533	1211.5603	0.0869
2886	28-86-06-24-87	06/24/87	2	mg/l	0.0114	0.0069 U	0.0003	250	NR	243.2036	1.7085	0.0826	2535.8950	0.2854
2886	28-86-09-08-87	09/08/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2986	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2986	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3787	Not Sampled													
3887	Not Sampled													
2686	G268609860	09/18/86		mg/l	0.020 U	0.075 U	0.00026	3.300	NR	106.0	0.117	0.100 U	338.0	0.040 U
2686	26-86-03-18-87	03/18/87	1	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	109.4408	0.0092	0.0220 U	368.0944	0.0370 U
2686	26-86-08-27-87	08/27/87	3	mg/l	0.0117	0.0069 U	0.0002 U	1.4	NR	127.7899	0.0098	0.0220 U	296.0713	0.0370 U
1886	DRY	09/03/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1886	DRY	08/05/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1786	G178609860	09/25/86		mg/l	0.020 U	0.075 U	0.0002 U	8.80	NR	142.0	0.010 U	0.100 U	322.0	0.040 U
1786	G178609862	09/25/86		mg/l	0.020 U	0.075 U	0.0002 U	7.80	NR	137.0	0.010 U	0.100 U	310.0	0.040 U
1786	17-86-04-22-87	04/22/87	1	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	129.1389	0.0051 U	0.0220 U	227.9212	0.0370 U
1786	17-86-06-10-87	06/10/87	2	mg/l	0.0076	0.1339	0.0002 U	5.0 U	NR	131.4248	0.4029	0.0220 U	219.4704	0.0562
1786	17-86-08-05-87	08/05/87	3	mg/l	0.0063 U	0.0069 U	0.0002 U	5.1	NR	162.2504	0.0051 U	0.0220 U	263.3607	0.0370 U
1786	17-86-12-08-87	12/08/87	4	mg/l	0.0118	0.0069 U	0.0002 U	NR	NR	162.5240	0.0051 U	0.0220 U	265.8579	0.0474
1586	G158609860	09/09/86		mg/l	0.020 U	0.075 U	0.0002 U	2.6	NR	61.5	0.026	0.100 U	88.0	0.040 U
1586	G158609862	09/09/86		mg/l	0.020 U	0.075 U	0.0002 U	2.920	NR	42.0	0.020	0.190	81.9	0.040 U
1586	15-86-04-22-87	04/22/87	1	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	46.7915	0.0168	0.0220 U	126.0598	0.0370 U
1586	15-86-06-10-87	06/10/87	2	mg/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	43.7933	0.0132	0.0220 U	117.9158	0.0370 U
1586	15-86-08-05-87	08/05/87	3	mg/l	0.0083	0.0069 U	0.0002 U	2.6	NR	43.1885	0.0089	0.0220 U	122.0968	0.0370 U
1586	15-86-12-08-87	12/08/87	4	mg/l	0.0063 U	0.0461	0.0002 U	0.5 U	0.1 U	0.0200 U	0.0051 U	0.0220 U	2.1000 U	0.0370 U
1386	DRY	09/03/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1386	13-86-04-23-87	04/23/87	1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1386	13-86-06-11-87	06/11/87	2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1386	13-86-08-04-87	08/04/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

**Groundwater Inorganic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Chloride	Cyanide, Total	Fluoride	Nitrate-Nitrite-Nitrogen	Sulfate	Total Dissolved Solids	HCO ₃ -
Solar Pond Alluvial Wells Upgradient										
2486	DRY	09/01/86		NA	NA	NA	NA	NA	NA	NA
2486	DRY	09/24/87	3	NA	NA	NA	NA	NA	NA	NA
2286	G228609860	09/09/86		37 mg/l	0.005 U mg/l	NR	NR	75 mg/l	750 mg/l	NR
2286	G228609862	09/09/86		36 mg/l	0.005 U mg/l	NR	NR	69 mg/l	490 mg/l	NR
2286	22-86-03-24-87	03/24/87	1	47.0 mg/l	1.0 U mg/l	NR	6.80 mg/l	81.0 mg/l	577 mg/l	231 mg/l
2286	22-86-06-24-87	06/24/87	2	48.1 mg/l	1.0 U mg/l	NR	2.30 mg/l	60.5 mg/l	477 mg/l	317 mg/l
2286	22-86-08-27-87	08/27/87	3	40.4 mg/l	1 U mg/l	NR	1.4 mg/l	59.0 mg/l	533 mg/l	335 mg/l
2286	22-86-12-18-87	12/18/87	4	28.5 mg/l	NR	NR	1.32 mg/l	70.0 mg/l	478 mg/l	308 mg/l
5887	Not Sampled									
Solar Pond Alluvial Wells Downgradient										
2086	DRY	09/12/86		NA	NA	NA	NA	NA	NA	NA
2086	DRY	09/24/87	3	NA	NA	NA	NA	NA	NA	NA
2886	G288609860	09/18/86		NA	NA	NA	NA	NA	NA	NA
2886	28-86-03-19-87	03/19/87	1	259 mg/l	1.0 U mg/l	NR	1120 mg/l	290 mg/l	9033 mg/l	381 mg/l
2886	28-86-06-24-87	06/24/87	2	40.1 mg/l	1.0 U mg/l	NR	2200 mg/l	390 mg/l	16776 mg/l	636 mg/l
2886	28-86-09-08-87	09/08/87	3	NR	1 U mg/l	NR	NR	NR	NR	NR
2986	DRY	09/12/86		NA	NA	NA	NA	NA	NA	NA
2986	DRY	09/24/87	3	NA	NA	NA	NA	NA	NA	NA
3787	Not Sampled									
3887	Not Sampled									
2686	G268609860	09/18/86		77 mg/l	NA	NR	NR	500 mg/l	1800 mg/l	NR
2686	26-86-03-18-87	03/18/87	1	67.7 mg/l	1.0 U mg/l	NR	88.0 mg/l	390 mg/l	1814 mg/l	682 mg/l
2686	26-86-08-27-87	08/27/87	3	59.7 mg/l	1 U mg/l	NR	79 mg/l	375 mg/l	1760 mg/l	650 mg/l
1886	DRY	09/03/86		NA	NA	NA	NA	NA	NA	NA
1886	DRY	08/05/87	3	NA	NA	NA	NA	NA	NA	NA
1786	G178609860	09/25/86		140 mg/l	0.005 U mg/l	NR	NR	330 mg/l	3900 mg/l	NR
1786	G178609862	09/25/86		140 mg/l	0.005 U mg/l	NR	NR	290 mg/l	3900 mg/l	NR
1786	17-86-04-22-87	04/22/87	1	97.0 mg/l	1.0 U mg/l	NR	145 mg/l	208 mg/l	1324 mg/l	332 mg/l
1786	17-86-06-10-87	06/10/87	2	105 mg/l	1.0 U mg/l	NR	305 mg/l	270 mg/l	2796 mg/l	333 mg/l
1786	17-86-08-05-87	08/05/87	3	11.9 mg/l	1 U mg/l	NR	465 mg/l	290 mg/l	3929 mg/l	296 mg/l
1786	17-86-12-08-87	12/08/87	4	123 mg/l	NR	NR	516 mg/l	282 mg/l	1906 mg/l	274 mg/l
1586	G158609860	09/09/86		63 mg/l	0.040 mg/l	NR	NR	170 mg/l	990 mg/l	NR
1586	G158609862	09/09/86		65 mg/l	0.005 U mg/l	NR	NR	180 mg/l	1000 mg/l	NR
1586	15-86-04-22-87	04/22/87	1	81.0 mg/l	1.0 U mg/l	NR	28.0 mg/l	204 mg/l	1125 mg/l	409 mg/l
1586	15-86-06-10-87	06/10/87	2	80.2 mg/l	1.0 U mg/l	NR	120 mg/l	175 mg/l	1153 mg/l	371 mg/l
1586	15-86-08-05-87	08/05/87	3	87.9 mg/l	1 U mg/l	NR	54 mg/l	195 mg/l	1117 mg/l	398 mg/l
1586	15-86-12-08-87	12/08/87	4	74.9 mg/l	NR	NR	34.5 mg/l	142 mg/l	996 mg/l	424 mg/l
1386	DRY	09/03/86		NA	NA	NA	NA	NA	NA	NA
1386	13-86-04-23-87	04/23/87	1	NA	NA	NA	NA	NA	NA	NA
1386	13-86-06-11-87	06/11/87	2	NA	NA	NA	NA	NA	NA	NA
1386	13-86-08-04-87	08/04/87	3	NA	NA	NA	NA	NA	NA	NA

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

Groundwater Inorganic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	CO3:	Hexavalent Chromium (Cr+6)
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Solar Pond Alluvial Wells Upgradient

2486	DRY	09/01/86		NA	NA
2486	DRY	09/24/87	3	NA	NA
2286	G228609860	09/09/86		NR	NR
2286	G228609862	09/09/86		NR	NR
2286	22-86-03-24-87	03/24/87	1	NR	NR
2286	22-86-06-24-87	06/24/87	2	NR	NR
2286	22-86-08-27-87	08/27/87	3	NR	NR
2286	22-86-12-18-87	12/18/87	4	NR	NR
5687	Not Sampled				

Solar Pond Alluvial Wells Downgradient

2086	DRY	09/12/86		NA	NA
2086	DRY	09/24/87	3	NA	NA
2886	G288609860	09/18/86		NA	NA
2886	28-86-03-19-87	03/19/87	1	NR	NR
2886	28-86-06-24-87	06/24/87	2	NR	NR
2886	28-86-09-08-87	09/08/87	3	NR	NR
2986	DRY	09/12/86		NA	NA
2986	DRY	09/24/87	3	NA	NA
3787	Not Sampled				
3887	Not Sampled				
2686	G268609860	09/18/86		NR	NR
2686	26-86-03-18-87	03/18/87	1	NR	NR
2686	26-86-08-27-87	08/27/87	3	NR	NR
1886	DRY	09/03/86		NA	NA
1886	DRY	08/05/87	3	NA	NA
1786	G178609860	09/25/86		NR	NR
1786	G178609862	09/25/86		NR	NR
1786	17-86-04-22-87	04/22/87	1	NR	NR
1786	17-86-06-10-87	06/10/87	2	NR	NR
1786	17-86-08-05-87	08/05/87	3	NR	NR
1786	17-86-12-08-87	12/08/87	4	NR	NR
1586	G158609860	09/09/86		NR	NR
1586	G158609862	09/09/86		NR	NR
1586	15-86-04-22-87	04/22/87	1	NR	NR
1586	15-86-06-10-87	06/10/87	2	NR	NR
1586	15-86-08-05-87	08/05/87	3	NR	NR
1586	15-86-12-08-87	12/08/87	4	NR	NR
1386	DRY	09/03/86		NA	NA
1386	13-86-04-23-87	04/23/87	1	NA	NA
1386	13-86-06-11-87	06/11/87	2	NA	NA
1386	13-86-08-04-87	08/04/87	3	NA	NA

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

**Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Gross Alpha	Gross Beta	Uranium 233, 234	Uranium 235	Uranium 238	Srtronium 89, 90	Plutonium 239, 240
Solar Pond Alluvial Wells Upgradient										
2486	DRY	09/01/86		NA	NA	NA	NA	NA	NA	NA
2486	DRY	09/24/87	3	NA	NA	NA	NA	NA	NA	NA
2286	G228609860	09/09/86		300 +/- 160 pci/l	240 +/- 60 pci/l	24 +/- 3 pci/l	NR	21 +/- 3 pci/l	NR	0.95 +/- 0.39 pci/l
2286	G228609862	09/09/86		130 +/- 40 pci/l	74 +/- 18 pci/l	9.6 +/- 1.1 pci/l	NR	6.7 +/- 0.9 pci/l	NR	0.97 +/- 0.20 pci/l
2286	22-86-03-24-87	03/24/87	1	42 +/- 31 pci/l	14 +/- 0 pci/l	9.2 +/- 2.4 pci/l	0.0 +/- .77 pci/l	4.3 +/- 1.9 pci/l	1.85	4.6 +/- 2.3 pci/l
2286	22-86-06-24-87	06/24/87	2	109 +/- 19 pci/l	109 +/- 14 pci/l	9.1 +/- 1.8 pci/l	0.04 +/- 0.44 pci/l	6.0 +/- 1.4 pci/l	<1.0	0.6 +/- 1.0 pci/l
2286	22-86-08-27-87	08/27/87	3	40 +/- 24 pci/l	38 +/- 40 pci/l	5.8 +/- 1.9 pci/l	0.6 +/- 0.5 pci/l	7.5 +/- 2.0 pci/l	5.7	>.32 +/- .85 pci/l
2286	22-86-12-18-87	12/18/87	4	13 +/- 8 pci/l	22 +/- 11 pci/l	5.6 +/- 0.5 pci/l	.12 +/- .06 pci/l	2.2 +/- 0.3 pci/l	<1.0	0.00 +/- .16 pci/l
5687	Not Sampled									

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis

Groundwater Radionuclides Results

Solar Pond Alluvial Wells Upgradient

Solar P 2486 2286 2286 2286 2286 2286 2286 2286 2286 2286 2286 2286

DRY	09/10/98	09/24/87	09/09/98	09/28/909860	09/09/98	09/09/98	03/24/87	22-98-03-24-87	22-98-06-24-87	06/24/87	08/27/87	22-98-08-27-87	08/27/87	22-98-12-17-87	12/18/87	No! Sampled
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Notes: NH : And yet the next reported

Notes: NR : Analyte not reported

GRADUATE RECOMMENDATION LETTERS

Groundwater Radiochemistry Results

Sample Number Sampled At Gross Alpha Gross Beta Uranium 235 Uranium 233, 234 Strontium 89, 90 Plutonium 239, 240

Solar Pond Alluvial Wells Downgradient

For Regulated Units at Rocky Flats Plant

Groundwater Radiochemistry Results

Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Americium 241	Cesium 137	Tritium
Solar Pond Alluvial Wells Downgradient						
2086	DRY	09/12/86		NA	NA	NA
2086	DRY	09/24/87	3	NA	NA	NA
2886	G288609860	09/18/86		NA	NA	NA
2886	28-86-03-19-87	03/19/87	1	0.0 +/- 5.4 pci/l	NR	6300 pci/l
2886	28-86-06-24-87	06/24/87	2	0.0 +/- 1.2 pci/l	NR	12000 pci/l
2886	28-86-09-08-87	09/08/87	3	NA	NA	NA
2986	DRY	09/12/86		NA	NA	NA
2986	DRY	09/24/87	3	NA	NA	NA
3787	Not Sampled					
3887	Not Sampled					
2686	G268609860	09/18/86		NA	NA	NA
2686	26-86-03-18-87	03/18/87	1	NR	NR	1300 pci/l
2686	26-86-08-27-87	08/27/87	3	- .04 +/- .60 pci/l	NR	1352 +/- 343 pci/l
1886	DRY	09/03/86		NA	NA	NA
1886	DRY	08/05/87	3	NA	NA	NA
1786	G178609860	09/25/86		-0.03 +/- 0.09 pci/l	NR	0.69 +/- 0.24 pci/l
1786	G178609862	09/25/86		0.02 +/- 0.11 pci/l	NR	0.77 +/- 0.24 pci/l
1786	17-86-04-22-87	04/22/87	1	0.0 +/- 1.5 pci/l	NR	380 pci/l
1786	17-86-06-10-87	06/10/87	2	0.0 +/- 1.2 pci/l	NR	<110 pci/l
1786	17-86-08-05-87	08/05/87	3	- .04 +/- .67 pci/l	NR	<540 pci/l
1786	17-86-12-08-87	12/08/87	4	0.00 +/- .41 pci/l	NR	730 +/- 100 pci/l
1586	G158609860	09/09/86		0.08 +/- 0.21 pci/l	NR	0.28 +/- 0.22 pci/l
1586	G158609862	09/09/86		0.00 +/- 0.13 pci/l	NR	0.17 +/- 0.22 pci/l
1586	15-86-04-22-87	04/22/87	1	0.0 +/- 2.1 pci/l	NR	<110 pci/l
1586	15-86-06-10-87	06/10/87	2	0.0 +/- 1.3 pci/l	NR	<110 pci/l
1586	15-86-08-05-87	08/05/87	3	.05 +/- .74 pci/l	NR	<492 pci/l
1586	15-86-12-08-87	12/08/87	4	0.00 +/- .18 pci/l	NR	<210 pci/l
1386	DRY	09/03/86		NA	NA	NA
1386	13-86-04-23-87	04/23/87	1	NA	NA	NA
1386	13-86-06-11-87	06/11/87	2	NA	NA	NA
1386	13-86-08-04-87	08/04/87	3	NA	NA	NA

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloro methane	Bromo methane	Vinyl Chloride	Chloro ethane	Methylene Chloride	Acetone	Carbon Disulfide	1,1-Dichloro ethene	1,1-Dichloro ethane	Trans-1,2-Dichloro ethene
Solar Pond Bedrock Wells Upgradient														
2386	6238611B60	11/25/86		ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
2386	23-86-03-18-87	03/18/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2386	23-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2386	23-86-09-23-87	09/23/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
2386	23-86-01-15-88	01/15/88	4	ug/l	10 U	10 U	10 U	10 U	13	10 U	5 U	5 U	5 U	5 U

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Volatile Organic Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chlorofor■	1,1,1-Trichloro ethane		Carbon tetrachloride		Vinyl acetate		Bromo dichloro methane		1,2-Dichloro propane		Trans-1,3-Dichloro propene		Trichloro ethene	
						1,2-Dichloro ethane	2-Butanone	1,1,1-Trichloro ethane	Carbon tetrachloride	Bromo dichloro methane	1,2-Dichloro propane	Trans-1,3-Dichloro propene	Trichloro ethene						
Solar Pond Bedrock Well Isopradient																			
2386	G2386111830	11/25/86		ug/l		5 U		10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2386	23-86-03-18-87	03/18/87	1	ug/l	4 U	4 U		NR	4 U	4 U	NR	NR	NR	NR	NR	NR	NR	NR	NR
2386	23-86-06-24-87	06/24/87	2	ug/l	4 U	4 U		NR	4 U	4 U	NR	NR	NR	NR	NR	NR	NR	NR	NR
2386	23-86-09-23-87	09/23/87	3	ug/l	5 U	5 U		NR	5 U	5 U	NR	NR	NR	NR	NR	NR	NR	NR	NR
2386	23-86-01-15-88	01/15/88	4	ug/l	5 U	5 U		10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Notes:
 MR : Analyte not reported
 MA : Insufficient water in well for analysis

U : Present in laboratory blank

J : Present below detection limit

8 : Present in laboratory blank

Groundwater Volatile Organic Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Dibromo chloro methane	1,1,2-Trichloro ethane	Benzene	cis-1,3-Dichloro propene	2-Chloro ethylvinyl ether	Bromoform	4-Methyl-2-pentanone	2-Hexanone	Tetrachloro ethene	1,1,2,2-Tetrachloro ethane
Solar Pond Bedrock Wells Upgradient														
2386	G238611860	11/25/86		ug/l	S U	5 U	5 U	S U	10 U	S U	10 U	10 U	S U	S U
2386	23-86-03-18-87	03/18/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	MR
2386	23-86-06-24-87	06/24/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	MR
2386	23-86-09-23-87	09/23/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	S U	NR
2386	23-86-01-15-88	01/15/88	4	ug/l	S U	5 U	5 U	S U	NR	S U	10 U	10 U	S U	S U

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Toluene	Chloro benzene	Ethyl benzene	Styrene	Total Xylenes
Solar Pond Bedrock Wells Upgradient									
2386	G238611B60	11/25/86		ug/l	5 U	5 U	5 U	5 U	5 U
2386	23-86-03-18-87	03/18/87	1	ug/l	NR	NR	NR	NR	NR
2386	23-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR
2386	23-86-09-23-87	09/23/87	3	ug/l	NR	NR	NR	NR	NR
2386	23-86-01-15-88	01/15/88	4	ug/l	5 U	5 U	5 U	5 U	5 U

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis

U = Analyzed but not detected

J = Present below detection limit

B = Present in laboratory blank

**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloro methane	Bromo methane	Vinyl Chloride	Chloro ethane	Methylene Chloride	Acetone	Carbon Disulfide	1,1-Dichloro ethene	1,1-Dichloro ethane	Trans-1,2-Dichloro ethene
Solar Pond Bedrock Wells Downgradient														
3286	6328611860	11/07/86		ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
3286	32-86-03-23-87	03/23/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
3286	32-86-04-15-87	04/15/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
3286	32-86-06-29-87	06/29/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
3286	32-86-09-22-87	09/22/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
3286	32-86-12-16-87	12/16/87	4	ug/l	10 U	10 U	10 U	10 U	14	10 U	5 U	5 U	5 U	5 U
3186	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3186	DRY	09/24/87	3		KA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3086	6308609860	09/19/86		ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
3086	30-86-03-23-87	03/23/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
3086	30-86-04-15-87	04/15/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
3086	30-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
3086	30-86-09-23-87	09/23/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
3086	30-86-01-15-88	01/15/88	4	ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
3987	Not Sampled													
2786	G278611860	11/07/86		ug/l	10 U	10 U	10 U	10 U	2 J	7 JB	5 U	5 U	5 U	5 U
2786	27-86-03-19-87	03/19/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2786	27-86-04-15-87	04/15/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2786	27-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2786	27-86-09-22-87	09/22/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
2786	27-86-12-16-87	12/16/87	4	ug/l	10 U	10 U	10 U	10 U	13	10 U	5 U	5 U	5 U	5 U
2586	6258611860	11/07/86		ug/l	10 U	10 U	10 U	10 U	5 U	21 B	5 U	5 U	5 U	5 U
2586	25-86-03-18-87	03/18/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2586	25-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
2586	25-86-08-27-87	08/27/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
2586	25-86-01-15-88	01/15/88	4	ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U
1686	G168609860	09/18/86		ug/l	10 U	10 U	10 U	10 U	5 U	7 BJ	5 U	5 U	5 U	5 U
1686	16-86-04-22-87	04/22/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1686	16-86-06-10-87	06/10/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1686	16-86-08-06-87	08/06/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
1686	16-86-12-17-87	12/17/87	4	ug/l	10 U	10 U	10 U	10 U	12	10 U	5 U	5 U	5 U	5 U
1486	G148609860	09/18/86		ug/l	10 U	10 U	10 U	10 U	4 J	7 BJ	5 U	5 U	5 U	5 U
1486	G148609862	09/18/86		ug/l	10 U	10 U	10 U	10 U	5 U	5 BJ	5 U	5 U	5 U	5 U
1486	14-86-04-16-87	04/16/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1486	14-86-04-16-87	04/16/87	1	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1486	14-86-06-10-87	06/10/87	2	ug/l	NR	NR	NR	NR	NR	NR	NR	4 U	NR	4 U
1486	14-86-08-05-87	08/05/87	3	ug/l	NR	NR	NR	NR	NR	NR	NR	5 U	NR	5 U
1486	14-86-12-08-87	12/08/87	4	ug/l	10 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Chloroform	1,2-Dichloro ethane	2-Butanone	1,1,1-Trichloro ethane	Carbon Tetra chloride	Vinyl Acetate	Bromo dichloro methane	1,2-Dichloro propane	Trans-1,3-Dichloro propene	Trichloro ethene
Solar Pond Bedrock Wells Downgradient														
3286	G328611860	11/07/86		ug/l	5 U	5 U	9 J	5 U	5 U	10 U	5 U	5 U	5 U	5 U
3286	32-86-03-23-87	03/23/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
3286	32-86-04-15-87	04/15/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
3286	32-86-06-29-87	06/29/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
3286	32-86-09-22-87	09/22/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
3286	32-86-12-16-87	12/16/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
3186	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3186	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3086	G308609860	09/19/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
3086	30-86-03-23-87	03/23/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
3086	30-86-04-15-87	04/15/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	5
3086	30-86-06-24-87	06/24/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
3086	30-86-09-23-87	09/23/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
3086	30-86-01-15-88	01/15/88	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
3987	Not Sampled													
2786	G278611860	11/07/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	1 J
2786	27-86-03-19-87	03/19/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
2786	27-86-04-15-87	04/15/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
2786	27-86-06-24-87	06/24/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
2786	27-86-09-22-87	09/22/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
2786	27-86-12-16-87	12/16/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
2586	G258611860	11/07/86		ug/l	5 U	5 U	15	5 U	5 U	10 U	5 U	5 U	5 U	5 U
2586	25-86-03-18-87	03/18/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
2586	25-86-06-24-87	06/24/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
2586	25-86-08-27-87	08/27/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
2586	25-86-01-15-88	01/15/88	4	ug/l	5 U	5 U	10 U	5 U	7	10 U	5 U	5 U	5 U	5 U
1686	G168609860	09/18/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1686	16-86-04-22-87	04/22/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1686	16-86-06-10-87	06/10/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1686	16-86-08-06-87	08/06/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
1686	16-86-12-17-87	12/17/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1486	G148609860	09/18/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1486	G148609862	09/18/86		ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U
1486	14-86-04-16-87	04/16/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1486	14-86-D-4-16-87	04/16/87	1	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1486	14-86-06-10-87	06/10/87	2	ug/l	4 U	4 U	NR	4 U	4 U	NR	NR	NR	NR	4 U
1486	14-86-08-05-87	08/05/87	3	ug/l	5 U	5 U	NR	5 U	5 U	NR	NR	NR	NR	5 U
1486	14-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U

Notes: NR = Analyte not reported

U = Analyzed but not detected

B : Present in laboratory blank

J : Present below detection limit

Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Dibromo chloro methane	1,1,2-Trichloro ethane	Benzene	cis-1,3-Dichloro propene	2-Chloro ethylvinyl ether	Bromoform	4-Methyl-2-pentanone	2-Hexanone	Tetrachloro ethene	1,1,2,2-Tetrachloro ethane
Solar Pond Bedrock Wells Downgradient														
3286	GJ28611B60	11/07/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
3286	32-86-03-23-87	03/23/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
3286	32-86-04-15-87	04/15/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
3286	32-86-06-29-87	06/29/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
3286	32-86-09-22-87	09/22/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
3286	32-86-12-16-87	12/16/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
3186	DRY	09/12/86			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3186	DRY	09/24/87	3		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3086	GJ08609860	09/19/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	2 J	5 U
3086	30-86-03-23-87	03/23/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
3086	30-86-04-15-87	04/15/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
3086	30-86-06-24-87	06/24/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	16	NR
3086	30-86-09-23-87	09/23/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
3086	30-86-01-15-88	01/15/88	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
3987	Not Sampled													
2786	G278611B60	11/07/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
2786	27-86-03-19-87	03/19/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2786	27-86-04-15-87	04/15/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2786	27-86-06-24-87	06/24/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2786	27-86-09-22-87	09/22/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
2786	27-86-12-16-87	12/16/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
2586	G258611B60	11/07/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
2586	25-86-03-18-87	03/18/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2586	25-86-06-24-87	06/24/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
2586	25-86-08-27-87	08/27/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
2586	25-86-01-15-88	01/15/88	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
1686	G168609860	09/18/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1686	16-86-04-22-87	04/22/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1686	16-86-06-13-87	06/10/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1686	16-86-08-06-87	08/06/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
1686	16-86-12-17-87	12/17/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U
1486	G148609860	09/18/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1486	G148609862	09/18/86		ug/l	5 U	5 U	5 U	5 U	10 U	5 U	10 U	10 U	5 U	5 U
1486	14-86-04-16-87	04/16/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1486	14-86-04-16-87	04/16/87	1	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1486	14-86-06-10-87	06/10/87	2	ug/l	NR	4 U	NR	NR	NR	NR	NR	NR	4 U	NR
1486	14-86-08-05-87	08/05/87	3	ug/l	NR	5 U	NR	NR	NR	NR	NR	NR	5 U	NR
1486	14-86-12-08-87	12/08/87	4	ug/l	5 U	5 U	5 U	5 U	NR	5 U	10 U	10 U	5 U	5 U

Notes: NR : Analyte not reported

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**Groundwater Volatile Organic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Toluene	Chloro benzene	Ethyl benzene	Styrene	Total Xylenes
Solar Pond Bedrock Wells Downgradient									
3286	G328611860	11/07/86		ug/l	S U	S U	S U	S U	S U
3286	32-86-03-23-87	03/23/87	1	ug/l	NR	NR	NR	NR	NR
3286	32-86-04-15-87	04/15/87	1	ug/l	NR	NR	NR	NR	NR
3286	32-86-06-29-87	06/29/87	2	ug/l	NR	NR	NR	NR	NR
3286	32-86-09-22-87	09/22/87	3	ug/l	NR	NR	NR	NR	NR
3286	32-86-12-16-87	12/16/87	4	ug/l	S U	S U	S U	S U	S U
3186	DRY	09/12/86			NA	NA	NA	NA	NA
3186	DRY	09/24/87	3		NA	NA	NA	NA	NA
3086	G308609860	09/19/86		ug/l	S U	S U	S U	S U	S U
3086	30-86-03-23-87	03/23/87	1	ug/l	NR	NR	NR	NR	NR
3086	30-86-04-15-87	04/15/87	1	ug/l	NR	NR	NR	NR	NR
3086	30-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR
3086	30-86-09-23-87	09/23/87	3	ug/l	NR	NR	NR	NR	NR
3086	30-86-01-15-88	01/15/88	4	ug/l	S U	S U	S U	S U	S U
3987	Not Sampled								
2786	G278611860	11/07/86		ug/l	S U	S U	S U	S U	S U
2786	27-86-03-19-87	03/19/87	1	ug/l	NR	NR	NR	NR	NR
2786	27-86-04-15-87	04/15/87	1	ug/l	NR	NR	NR	NR	NR
2786	27-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR
2786	27-86-09-22-87	09/22/87	3	ug/l	NR	NR	NR	NR	NR
2786	27-86-12-16-87	12/16/87	4	ug/l	S U	S U	S U	S U	S U
2586	G258611860	11/07/86		ug/l	2 J	S U	S U	S U	S U
2586	25-86-03-18-87	03/18/87	1	ug/l	NR	NR	NR	NR	NR
2586	25-86-06-24-87	06/24/87	2	ug/l	NR	NR	NR	NR	NR
2586	25-86-08-27-87	08/27/87	3	ug/l	NR	NR	NR	NR	NR
2586	25-86-01-15-88	01/15/88	4	ug/l	S U	S U	S U	S U	S U
1686	G168609860	09/18/86		ug/l	S U	S U	S U	S U	S U
1686	16-86-04-22-87	04/22/87	1	ug/l	NR	NR	NR	NR	NR
1686	16-86-06-10-87	06/10/87	2	ug/l	NR	NR	NR	NR	NR
1686	16-86-08-06-87	08/06/87	3	ug/l	NR	NR	NR	NR	NR
1686	16-86-12-17-87	12/17/87	4	ug/l	S U	S U	S U	S U	S U
1486	G148609860	09/18/86		ug/l	S U	S U	S U	S U	S U
1486	G148609862	09/18/86		ug/l	S U	S U	S U	S U	S U
1486	14-86-04-16-87	04/16/87	1	ug/l	NR	NR	NR	NR	NR
1486	14-86-04-16-87	04/16/87	1	ug/l	NR	NR	NR	NR	NR
1486	14-86-06-10-87	06/10/87	2	ug/l	NR	NR	NR	NR	NR
1486	14-86-08-05-87	08/05/87	3	ug/l	NR	NR	NR	NR	NR
1486	14-86-12-08-87	12/08/87	4	ug/l	S U	S U	S U	S U	S U

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

Groundwater Metals Results

for Regulated Units at Rocky Flats Plant

Field Number	Date Sampled	Units	Silver	Aluminum	(Ag), total	Barium	arsenic	Beryllium	Calcium	Colbalt	Cadmium	Chromium	Cesium	Cobalt, total	Copper, total	Lead, total	Manganese	Nickel, total	Potassium	Sulfur	Titanium	Uranium	Vanadium	Water Point Breakwell Wells Upgrade
2386	CS9611860	11/25/86	NA	NA	NA	NA	NA	NA	NA	0.005	0.0328	0.005	NA	0.001	0.0220	0.0100	0.02	0.02	NA	NA	NA	NA	01/15/88	
2386	23-86-02-18-87	03/18/87	NA	NA	NA	NA	NA	NA	NA	0.0076	0.0551	0.005	NA	0.005	0.005	0.001	NA	NA	NA	NA	NA	NA	09/23/87	
2386	23-86-06-24-87	06/24/87	NA	NA	NA	NA	NA	NA	NA	0.0076	0.0551	0.005	NA	0.005	0.005	0.001	NA	NA	NA	NA	NA	NA	09/23/87	
2386	23-86-09-23-87	09/23/87	NA	NA	NA	NA	NA	NA	NA	0.0076	0.0551	0.005	NA	0.005	0.005	0.001	NA	NA	NA	NA	NA	NA	01/15/88	

Notes: NR : Analyte not reported
 U : Analyzed but not detected
 8 : Present in laboratory blank
 j : Present below detection limit
 NA : Insufficient material in well for analysis

Groundwater Metals Results

for Regulated Units at Rocky Flats Plant

Sample Number	Field Number	Date Sampled	Qtr.	Units	Copper (Cu), total	Iron (Fe), total	Mercury (Hg), total	Potassium (K), total	Lithium (Li), total	Magnesium (Mg), total	Manganese (Mn), total	Molybdenum (Mo), total	Sodium (Na), total	Nickel (Ni), total
Clear Pond Bedrock Wells Upgradient														
186	6238611860	11/25/86			NA	NA		NA	NA	NA	NA	NA	NA	NA
188	23-86-01-18-87	03/18/87	1		NA	NA		NA	NA	NA	NA	NA	NA	NA
186	23-86-06-24-87	06/24/87	2		NA	NA		NA	NA	NA	NA	NA	NA	NA
186	23-86-04-23-87	09/23/87	3		NA	NA		NA	NA	NA	NA	NA	NA	NA
186	23-86-01-15-88	01/15/88	4	ug/l	0.0287	0.0266	0.0002 U	14.0	0.08 J	24.7129	0.1107	0.0200 U	187.1679	0.0370 U

Notes:

- NA : Analyte not reported
- U : Insufficient water in well for analysis

U : Analyzed but not detected
J : Present below detection limit

8 : Present in laboratory blank

Groundwater Metals Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Lead (Pb), total	Antimony (Sb), total	Selenium (Se), total	Strontium (Sr), total	Thallium (Tl), total	Vanadium (V), total	Zinc (Zn), total
Solar Pond Bedrock Wells Upgradient											
2386	G238611B60	11/25/86			NA	NA	NA	NA	NA	NA	NA
2386	23-86-03-18-87	03/18/87	1		NA	NA	NA	NA	NA	NA	NA
2386	23-86-06-24-87	06/24/87	2		NA	NA	NA	NA	NA	NA	NA
2386	23-86-09-23-87	09/23/87	3		NA	NA	NA	NA	NA	NA	NA
2386	23-86-01-15-88	01/15/88	4	mg/l	0.003 J	0.02 U	0.007	1.1892	0.01 U	0.0288	0.0200 U

Notes: NA : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

B : Present in laboratory blank

Groundwater Metals Results

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Silver (Ag), total	Aluminum (Al), total	arsenic (As), total	Boron (B), total	Beryllium (Be), total	Cadmium (Cd), total	Chromium (Cr), total	Cesium (Cs), total
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Sol's Pond Bedrock Wells Loring Radiant

NA : Insufficient material in well for analysis

β = present below detection limit

8 : Present in laboratory blank

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Groundwater Metals Results
for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Units	Copper (Cu), total	Iron (Fe), total	Mercury (Hg), total	Potassium (K), total	Lithium (Li), total	Magnesium (Mg), total	Manganese (Mn), total	Molybdenum (Mo), total	Sodium (Na), total	Nickel (Ni), total	
Solar Pond Bedrock Wells Downgradient															
3286	G328611860	11/07/86		ug/l	0.020 U	0.075 U	0.0002 U	8.35	NR	7.66	0.023	0.100 U	118.0	0.020 U	
3286	32-86-03-23-87	03/23/87	1	ug/l	0.0104	0.0069 U	0.0002 U	10.0	NR	13.4199	0.0253	0.0329	152.1539	0.0370 U	
3286	32-86-04-15-87	04/15/87	1	ug/l	0.0063 U	0.0069 U	0.0002 U	5.0	NR	12.5789	0.0624	0.0312	152.2707	0.0370 U	
3286	32-86-06-29-87	06/29/87	2	ug/l	0.0063 U	0.0069 U	0.0002 U	5.0 U	NR	12.6078	0.5887	0.0412	36.2891	0.0622	
3286	32-86-09-22-87	09/22/87	3	ug/l	0.0154	0.0250	0.0002 U	7.0	NR	9.4922	0.1441	0.0220 U	127.9161	0.0370 U	
3286	32-86-12-16-87	12/16/87	4	ug/l	0.0465	0.0401		NR	NR	9.0414	0.1400	0.0220 U	132.8561	0.0370 U	
3186	DRY	09/12/86		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3186	DRY	09/24/87	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3086	G308609860	09/19/86		ug/l	0.020 U	0.478	0.0011	38.60	NR	165.0	0.631	0.100 U	1440.0	0.040 U	
3086	30-86-03-23-87	03/23/87	1	ug/l	0.0063 U	0.0069 U	0.0002 U	132.0	NR	135.9616	0.0542	0.0220 U	1062.7017	0.0370 U	
3086	30-86-04-15-87	04/15/87	1	ug/l	0.0063 U	0.0069 U	0.0002 U	82.0	NR	215.1646	0.0789	0.0220 U	1145.1616	0.0370 U	
3086	30-86-06-24-87	06/24/87	2	ug/l	0.0063 U	0.0069 U	0.0002 U	74	NR	308.1397	0.0703	0.0220 U	1407.9877	0.0370 U	
3086	30-86-09-23-87	09/23/87	3	ug/l	0.0064	0.0069 U	0.0002 U	125	NR	309.5655	0.0648	0.0220 U	1284.9274	0.0370 U	
3086	30-86-01-15-88	01/15/88	4	ug/l	0.0375	0.0262	0.0002 U	146	1.2	274.2444	0.0224	0.0220 U	1390.1968	0.0689	
3987	Not Sampled														
2786	G278611860	11/07/86		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2786	27-86-03-19-87	03/19/87	1	ug/l	0.0063 U	0.0069 U	0.0002 U	9.0	NR	14.0300	0.0727	0.0532	259.9004	0.1271	
2786	27-86-04-15-87	04/15/87	1	ug/l	0.0067	0.0295	0.0002 U	7.4	NR	16.3832	0.1074	0.0295	247.4084	0.1869	
2786	27-86-06-24-87	06/24/87	2	ug/l	0.0067	0.0069 U	0.0002 U	5.6	NR	13.7816	0.0758	0.0336	219.6025	0.1158	
2786	27-86-09-22-87	09/22/87	3	ug/l	0.0315	0.0194	0.0002 U	9.1	NR	13.3113	0.0627	0.0220 U	200.8369	0.0993	
2786	27-86-12-16-87	12/16/87	4	ug/l	0.0374	0.0459		NR	NR	12.6190	0.0775	0.0246	205.7062	0.0622	
2586	G258611860	11/07/86		ug/l	0.020 U	0.075 U	0.0002 U	35.0	NR	80.5	0.237	0.313	33.8	0.965	
2586	25-86-03-18-87	03/18/87	1	ug/l	0.0063 U	0.0069 U	0.0002 U	25.0	NR	76.7010	0.2537	0.0404	247.4230	0.1249	
2586	25-86-06-24-87	06/24/87	2	ug/l	0.0063 U	0.0069 U	0.0003	17	NR	107.3566	0.4087	0.0378	306.8792	0.2102	
2586	25-86-08-27-87	08/27/87	3	ug/l	0.0082	0.0069 U	0.0002 U	18.0	NR	101.2028	0.1711	0.0226	280.0023	0.1005	
2586	25-86-01-15-88	01/15/88	4	ug/l	0.0307	0.0226	0.0002 U	15.5	0.2	100.3111	0.1493	0.0515	282.6460	0.0757	
1686	G168609860	09/18/86		ug/l	0.020 U	0.075 U	0.0003	6.260	NR	45.5	0.063	0.100 U	297.0	0.040 U	
1686	16-86-04-22-87	04/22/87	1	ug/l	0.0452	0.0069 U	0.0002 U	7.0	NR	49.2672	0.3438	0.0220 U	291.2435	0.1672	
1686	16-86-06-10-87	06/10/87	2	ug/l	0.0725	0.0069 U	0.0002 U	7.7	NR	47.9527	0.2145	0.0220 U	271.1135	0.2061	
1686	16-86-08-06-87	08/06/87	3	ug/l	0.0545	0.0125	0.0002 U	8.0	NR	46.9435	0.1336	0.0220 U	287.2474	0.0891	
1686	16-86-12-17-87	12/17/87	4	ug/l	0.0203	0.0169		NR	NR	45.2821	0.1375	0.0220 U	272.4460	0.0464	
1486	G148609860	09/18/86		ug/l	0.020 U	0.075 U	0.0002 U	7.92	NR	29.2	0.042	0.100 U	267	0.040 U	
1486	G148609862	09/18/86		ug/l	0.020 U	0.075 U	0.0002 U	8.15	NR	29.3	0.043	0.100 U	286	0.040 U	
1486	14-86-04-16-87	04/16/87	1	ug/l	0.0063 U	0.0069 U	0.0002 U	7.0	NR	41.1586	0.1693	0.0220 U	251.2908	0.0370 U	
1486	14-86-04-16-87	04/16/87	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1486	14-86-06-10-87	06/10/87	2	ug/l	0.0063 U	0.0069 U	0.0002 U	7.6	NR	41.0748	0.1361	0.0220 U	250.3055	0.0476	
1486	14-86-08-05-87	08/05/87	3	ug/l	0.0063 U	0.0069 U	0.0002 U	7.7	NR	41.2658	0.1968	0.0220 U	253.3903	0.0370 U	
1486	14-86-12-08-87	12/08/87	4	ug/l	0.0134	0.0080	0.001 U	~	NR	0.02 U	44.2873	0.0145	0.0220 U	164.4335	0.0370 U

Notes: NR : Analyte not reported

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J : Present below detection limit

B : Present in laboratory blank

for Regulated Units at Rocky Flats Plant

Groundwater Metabolism Results

Field	Sample Number	Date	Sampled	Off.	Units	Lead	(Pb), total	Antimony	(Sb), total	Selenium	(Se), total	Strontium	(Sr), total	Thallium	(Tl), total	Vanadium	(V), total	Zinc	(Zn), total
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Solar Pond Bedrock Wells Downgradient

**Groundwater Inorganic Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Chloride	Cyanide, Total	Fluoride	Nitrate-Nitrite-Nitrogen	Sulfate	Total Dissolved Solids	HCO3-
Solar Pond Bedrock Wells Upgradient										
2386	G238611860	11/25/86		NA	NA	NA	NA	NA	NA	NA
2386	23-86-03-18-87	03/18/87	1	190 mg/l	NR	NR	NR	340 mg/l	NR	NR
2386	23-86-06-24-87	06/24/87	2	NA	NA	NA	NA	NA	NA	NA
2386	23-86-09-23-87	09/23/87	3	NA	NA	NA	NA	NA	NA	NA
2386	23-86-01-15-88	01/15/88	4	172 mg/l	NR	NR	0.02 U mg/l	321 mg/l	962 mg/l	190 mg/l

Notes: NR : Analyte not reported

NA : Insufficient water in well for analysis

U : Analyzed but not detected

J : Present below detection limit

8 : Present in laboratory blank

Soil Pond Sediment Mills Upgrade Item

Mills	Field	Sample Number	Dates	Sampled	Qtr.	CO3:	Chloroquin (Cr+6)	Hexavalent	Chloroquin (Cr+6)	Qtr.	Sampled	Number
2386	6238611860	11/25/86		NA			NA		NA			2386
2386	23-86-03-18-87	03/18/87	1	NA			NA		NA			2386
2386	23-86-06-24-87	06/24/87	2	NA			NA		NA			2386
2386	23-86-09-23-87	09/23/87	3	NA			NA		NA			2386
2386	23-86-01-15-88	01/15/88	4	NA			NA		NA			2386

for Regulated Units at Rocky Flats Plant

Groundwater Inorganic Results

Notes: NR : Analyte not reported
 U : Analyzed but not detected
 G : Present in laboratory blank
 J : Present below detection limit
 NA : Insufficient material in well for analysis

Groundwater Inorganic Results

for Regulated Units at Rocky Flats Plant

Well Number	Field Sample Number	Date Sampled	Qtr.	Chloride		Cyanide, Total	Fluoride	Nitrate-Nitrite-Nitrogen		Sulfate	Total Dissolved Solids	HCO3-					
				mg/l	µg/l			mg/l	µg/l								
Solar Pond Bedrock Wells Downgradient																	
3286	G328611860	11/07/86		122	mg/l	0.005	U	mg/l	NR	NR	101	mg/l	616	mg/l	NR		
3286	32-86-03-23-87	03/23/87	1	107	mg/l	1.0	U	mg/l	NR	6.90	mg/l	92.0	mg/l	523	mg/l	223	mg/l
3286	32-86-04-15-87	04/15/87	1	107	mg/l	1.0	U	mg/l	NR	1.88	mg/l	92.0	mg/l	575	mg/l	195	mg/l
3286	32-86-06-29-87	06/29/87	2	146	mg/l	1.0	U	mg/l	NR	0.40	mg/l	57.0	mg/l	512	mg/l	175	mg/l
3286	32-86-09-22-87	09/22/87	3	121.7	mg/l	1	U	mg/l	NR	0.46	mg/l	66	mg/l	547	mg/l	187	mg/l
3286	32-86-12-16-87	12/16/87	4	109	mg/l	NR			NR	0.19	mg/l	75.0	mg/l	507	mg/l	198.1	mg/l
3186	DRY	09/12/86		NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	
3186	DRY	09/24/87	3	NA		NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	
3086	G308609860	09/19/86		430	mg/l	0.005	U	mg/l	NR	NR	100	mg/l	20000	mg/l	NR		
3086	30-86-03-23-87	03/23/87	1	179	mg/l	1.0	U	mg/l	NR	1440	mg/l	215	mg/l	8085	mg/l	334	mg/l
3086	30-86-04-15-87	04/15/87	1	215	mg/l	1.0	U	mg/l	NR	8.40	mg/l	340	mg/l	9430	mg/l	221	mg/l
3086	30-86-06-24-87	06/24/87	2	288	mg/l	1.0	U	mg/l	NR	2040	mg/l	280	mg/l	13740	mg/l	297	mg/l
3086	30-86-09-23-87	09/23/87	3	318	mg/l	1	U	mg/l	NR	1520	mg/l	301	mg/l	14019	mg/l	301	mg/l
3086	30-86-01-15-88	01/15/88	4	276	mg/l	NR			NR	1457	mg/l	282	mg/l	13682	mg/l	298	mg/l
3987	Not Sampled																
2786	G278611860	11/07/86		NA		NA		NA	NA	NA	NA	NA	NA	NA	NA		
2786	27-86-03-19-87	03/19/87	1	144	mg/l	1.0	U	mg/l	NR	42.0	mg/l	245	mg/l	793	mg/l	180	mg/l
2786	27-86-04-15-87	04/15/87	1	167	mg/l	1.0	U	mg/l	NR	0.20	U	260	mg/l	756	mg/l	161	mg/l
2786	27-86-06-24-87	06/24/87	2	160	mg/l	1.0	U	mg/l	NR	0.20	U	188	mg/l	812	mg/l	168	mg/l
2786	27-86-09-22-87	09/22/87	3	166.8	mg/l	1	U	mg/l	NR	0.20	U	340	mg/l	842	mg/l	186	mg/l
2786	27-86-12-16-87	12/16/87	4	141	mg/l	NR			NR	0.40	mg/l	219	mg/l	823	mg/l	184.2	mg/l
2586	G258611860	11/07/86		NA		NA		NA	NA	NA	NA	NA	NA	NA	NA		
2586	25-86-03-18-87	03/18/87	1	52.5	mg/l	1.0	U	mg/l	NR	0.28	mg/l	1100	mg/l	2322	mg/l	410	mg/l
2586	25-86-06-24-87	06/24/87	2	40.5	mg/l	1.0	U	mg/l	NR	0.20	U	400	mg/l	2242	mg/l	390	mg/l
2586	25-86-08-27-87	08/27/87	3	42.2	mg/l	1	U	mg/l	NR	0.45	mg/l	1060	mg/l	2265	mg/l	407	mg/l
2586	25-86-01-15-88	01/15/88	4	44.9	mg/l	NR			NR	0.10	mg/l	1030	mg/l	2337	mg/l	437	mg/l
1686	G168609860	09/18/86		220	mg/l	0.005	U	mg/l	NR	NR	510	mg/l	1400	mg/l	NR		
1686	16-86-04-22-87	04/22/87	1	242	mg/l	1.0	U	mg/l	NR	0.60	mg/l	179	mg/l	2489	mg/l	368	mg/l
1686	16-86-06-10-87	06/10/87	2	202	mg/l	1.0	U	mg/l	NR	0.20	U	175	mg/l	1470	mg/l	348	mg/l
1686	16-86-08-06-87	08/06/87	3	201	mg/l	1	U	mg/l	NR	0.29	mg/l	495	mg/l	1442	mg/l	364	mg/l
1686	16-86-12-17-87	12/17/87	4	180	mg/l	NR			NR	0.09	mg/l	420	mg/l	1459	mg/l	381	mg/l
1486	G148609860	09/18/86		160	mg/l	0.005	U	mg/l	NR	NR	310	mg/l	1200	mg/l	NR		
1486	G148609862	09/18/86		150	mg/l	0.005	U	mg/l	NR	NR	490	mg/l	1100	mg/l	NR		
1486	14-86-04-16-87	04/16/87	1	79.2	mg/l	1.0	U	mg/l	NR	0.60	mg/l	550	mg/l	1303	mg/l	340	mg/l
1486	14-86-04-16-87	04/16/87	1	NA		NA		NA	NR	NR	NA	NA	NA	NA	NA		
1486	14-86-06-10-87	06/10/87	2	81.7	mg/l	1.0	U	mg/l	NR	0.20	U	570	mg/l	1331	mg/l	332	mg/l
1486	14-86-08-05-87	08/05/87	3	83.2	mg/l	1	U	mg/l	NR	0.20	U	148	mg/l	1292	mg/l	347	mg/l
1486	14-86-12-08-87	12/08/87	4	78.9	mg/l	NR			NR	0.04	mg/l	562	mg/l	1358	mg/l	384	mg/l

Notes: NR : Analyte not reported

U : Analyzed but not detected

B : Present in laboratory blank

NA : Insufficient water in well for analysis

J : Present below detection limit

**Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Gross Alpha		Uranium 233, 234	Uranium 235	Uranium 238	Strontium 89, 90	Plutonium 239, 240
				Gross Beta	Gross Alpha					
Solar Pond Bedrock Wells Upgradient										
23B6	6238611840	11/25/86		NA	NA				NA	NA
23B6	23-86-03-18-87	03/18/87	1	NR	NR				NR	NR
23B6	23-86-03-24-87	06/24/87	2	NA	NA				NA	NA
23B6	23-86-09-23-87	09/23/87	3	NA	NA				NA	NA
23B6	23-86-01-15-88	01/15/88	4	11 +/- 8	pci/l	28 +/- 13	pci/l	2.7 +/- 0.4	pci/l	.06 +/- .06
								.06 +/- .06	pci/l	.06 +/- .06
								1.1 +/- 0.2	pci/l	.06 +/- .06
								<1.0	pci/l	0.00 +/- .16

Notes: NR : Analyte not reported
NA : Insufficient water in well for analysis

Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant

Solar Pond Bedrock Wells Upgrade

Well	Field Sample Number	Date Sampled	Qtr.	Americium 241	Cesium 137	Tritium	
2386	.6258611860	11/25/86	NA	NA	NA	NA	
2386	23-86-03-18-87	03/18/87	NR	NR	NR	NR	
2386	23-86-06-24-87	06/24/87	NR	NR	NR	NR	
2386	23-86-09-23-87	09/23/87	NR	NR	NR	NR	
2386	23-86-01-15-88	01/15/88	NR	NR	NR	NR	
				0.01 +/- .11 pCi/l	0.01 +/- .11 pCi/l	0.0220 pCi/l	

Notes: NR : Not yet reported
NA : Insufficient material in well for analysis

**Groundwater Radiochemistry Results
for Regulated Units at Rocky Flats Plant**

Well Number	Field Sample Number	Date Sampled	Qtr.	Americium 241	Cesium 137	Tritium
Solar Pond Bedrock Wells Downgradient						
3286	6328611860	11/07/86		-0.06 +/- 0.75 pCi/l	NR	0.10 +/- 0.20 pCi/l
3286	32-86-03-23-87	03/23/87	1	0.0 +/- 1.8 pCi/l	NR	<110 pCi/l
3286	32-86-04-15-87	04/15/87	1	0.0 +/- 1.2 pCi/l	NR	<110 pCi/l
3286	32-86-06-29-87	06/29/87	2	0.0 +/- 1.2 pCi/l	NR	<110 pCi/l
3286	32-86-09-22-87	09/22/87	3	-0.04 +/- .26 pCi/l	NR	<472 pCi/l
3286	32-86-12-16-87	12/16/87	4	0.00 +/- .14 pCi/l	NR	<210 pCi/l
3186	DRY	09/12/86		NA	NA	NA
3186	DRY	09/24/87	3	NA	NA	NA
3086	6308609860	09/19/86		NA	NA	NA
3086	30-86-03-23-87	03/23/87	1	1.1 +/- 9.9 pCi/l	NR	6400 pCi/l
3086	30-86-04-15-87	04/15/87	1	0.0 +/- 1.2 pCi/l	NR	8500 pCi/l
3086	30-86-06-24-87	06/24/87	2	0.0 +/- 1.3 pCi/l	NR	9800 pCi/l
3086	30-86-09-23-87	09/23/87	3	-0.04 +/- .96 pCi/l	NR	8611 +/- 825 pCi/l
3086	30-86-01-15-88	01/15/88	4	NR	NR	7900 +/- 200 pCi/l
3987	Not Sampled					
2786	G278611860	11/07/86		NA	NA	NA
2786	27-86-03-19-87	03/19/87	1	0.0 +/- 1.6 pCi/l	NR	<110 pCi/l
2786	27-86-04-15-87	04/15/87	1	0.2 +/- 1.9 pCi/l	NR	<110 pCi/l
2786	27-86-06-24-87	06/24/87	2	0.2 +/- 1.2 pCi/l	NR	<110 pCi/l
2786	27-86-09-22-87	09/22/87	3	NA	NA	NA
2786	27-86-12-16-87	12/16/87	4	0.00 +/- .69 pCi/l	NR	<210 pCi/l
2586	G258611860	11/07/86		NA	NA	NA
2586	25-86-03-18-87	03/18/87	1	0.0 +/- 8.4 pCi/l	NR	210 pCi/l
2586	25-86-06-24-87	06/24/87	2	0.0 +/- 1.3 pCi/l	NR	<110 pCi/l
2586	25-86-08-27-87	08/27/87	3	-0.04 +/- .18 pCi/l	NR	<492 pCi/l
2586	25-86-01-15-88	01/15/88	4	0.00 +/- .10 pCi/l	NR	<220 pCi/l
1686	G168609860	09/18/86		0.01 +/- 0.25 pCi/l	NR	0.11 +/- 0.23 pCi/l
1686	16-86-04-22-87	04/22/87	1	0.4 +/- 1.6 pCi/l	NR	<110 pCi/l
1686	16-86-06-10-87	06/10/87	2	0.0 +/- 1.3 pCi/l	NR	<110 pCi/l
1686	16-86-08-06-87	08/06/87	3	.10 +/- .33 pCi/l	NR	<540 pCi/l
1686	16-86-12-17-87	12/17/87	4	NR	NR	<210 pCi/l
1486	G148609860	09/18/86		0.01 +/- 0.03 pCi/l	NR	-0.09 +/- 0.22 pCi/l
1486	G148609862	09/18/86		0.21 +/- 0.38 pCi/l	NR	0.00 +/- 0.22 pCi/l
1486	14-86-04-16-87	04/16/87	1	0.0 +/- 1.2 pCi/l	NR	<110 pCi/l
1486	14-86-04-16-87	04/16/87	1	NA	NA	NA
1486	14-86-06-10-87	06/10/87	2	0.0 +/- 1.2 pCi/l	NR	<110 pCi/l
1486	14-86-08-05-87	08/05/87	3	.04 +/- .40 pCi/l	NR	<492 pCi/l
1486	14-86-12-08-87	12/08/87	4	0.00 +/- .13 pCi/l	NR	<210 pCi/l

Notes: NR = Analyte not reported

NA = Insufficient water in well for analysis